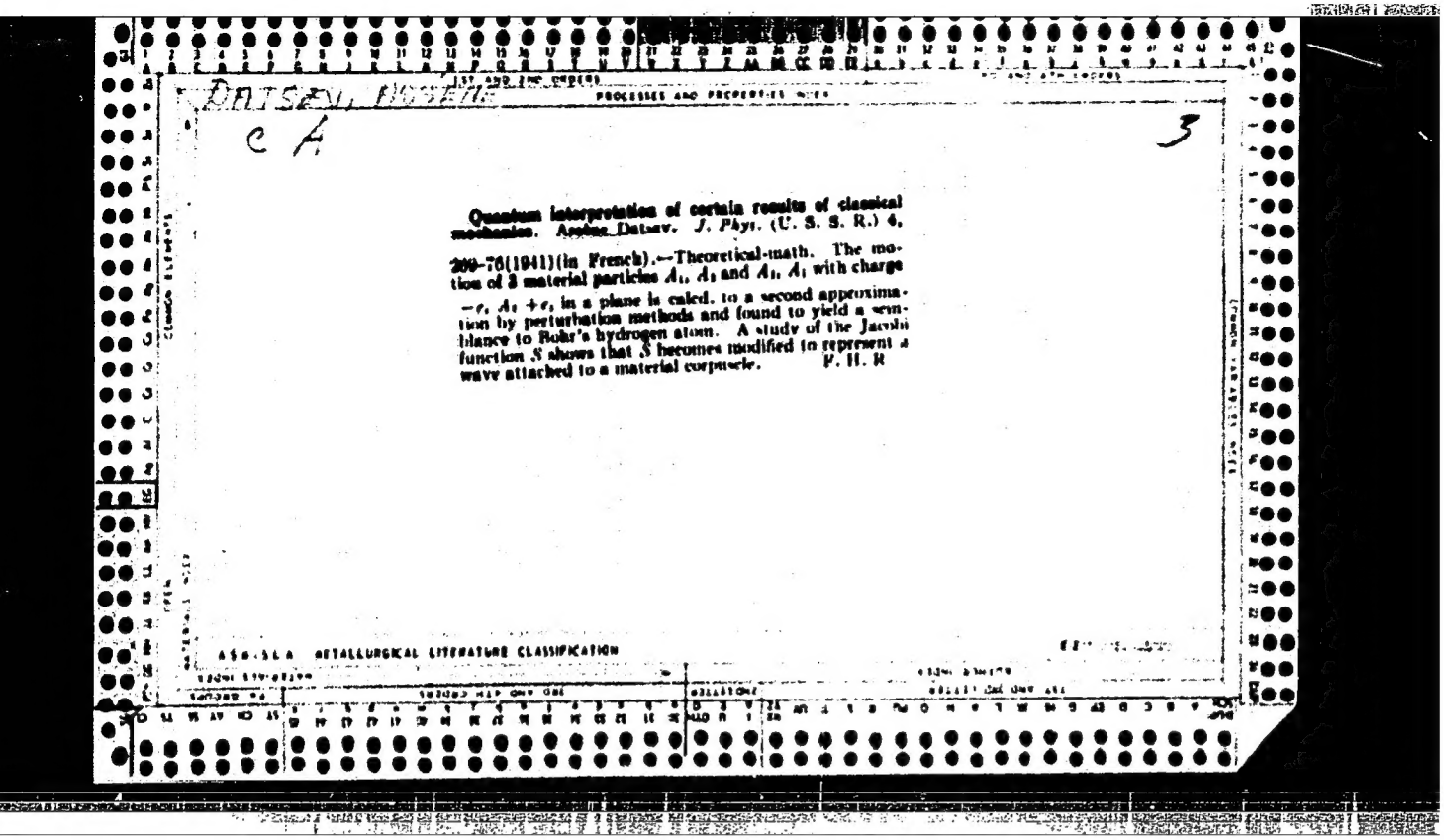
DATSEV, A.B.

Interpretation of quantum mechanics. Pt. 4. Godishnik fiz mat 55 no.2:55-88 '60/'61 [publ. '62].



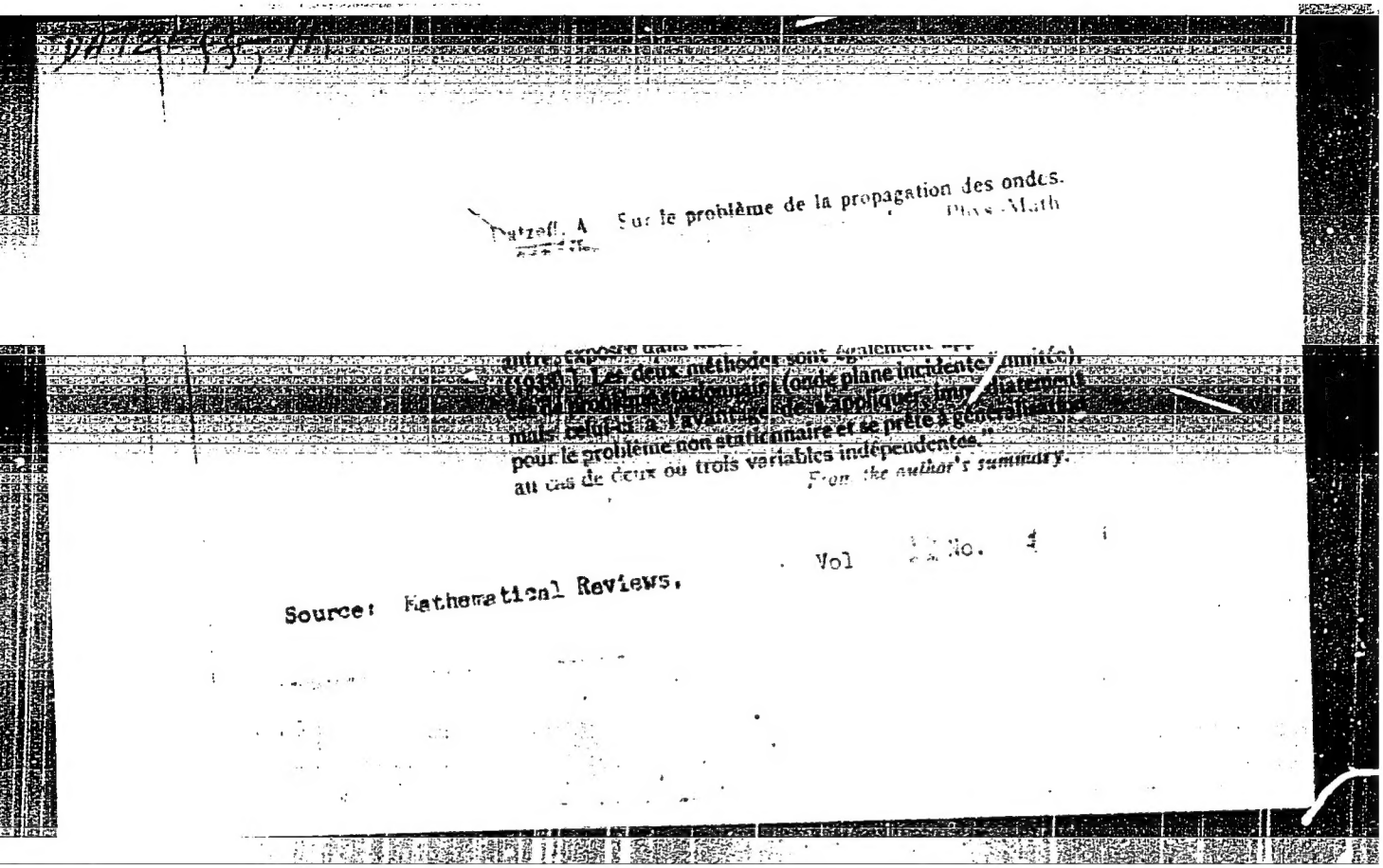
DATSEVICH

C A

3

Quantum interpretation of certain results of classical mechanics. Arsène Datsev. *J. Phys.* (U. S. S. R.) 4, 209–76(1941)(in French).—Theoretical-math. The motion of 3 material particles A_1, A_2 and A_3, A_1 with charge $-e$, A_2 $+e$, in a plane is calcd. to a second approximation by perturbation methods and found to yield a semblance to Bohr's hydrogen atom. A study of the Jacobi function S shows that S becomes modified to represent a wave attached to a material corpuscle. P. H. R

A50-51A METALLURGICAL LITERATURE CLASSIFICATION



Patzelt, A. Sur le problème de la propagation des ondes. Phys.-Math

autre exposé dans [illegible] sont également [illegible] annihilé).
(1943). Les deux méthodes sont [illegible] (onde plane incidente, annihilé).
[illegible] problème bidimensionnel [illegible] diatermanes
mais celle-ci a l'avantage de s'appliquer [illegible]
pour le problème non stationnaire et se prête à [illegible]
au cas de deux ou trois variables indépendantes.
From the author's summary.

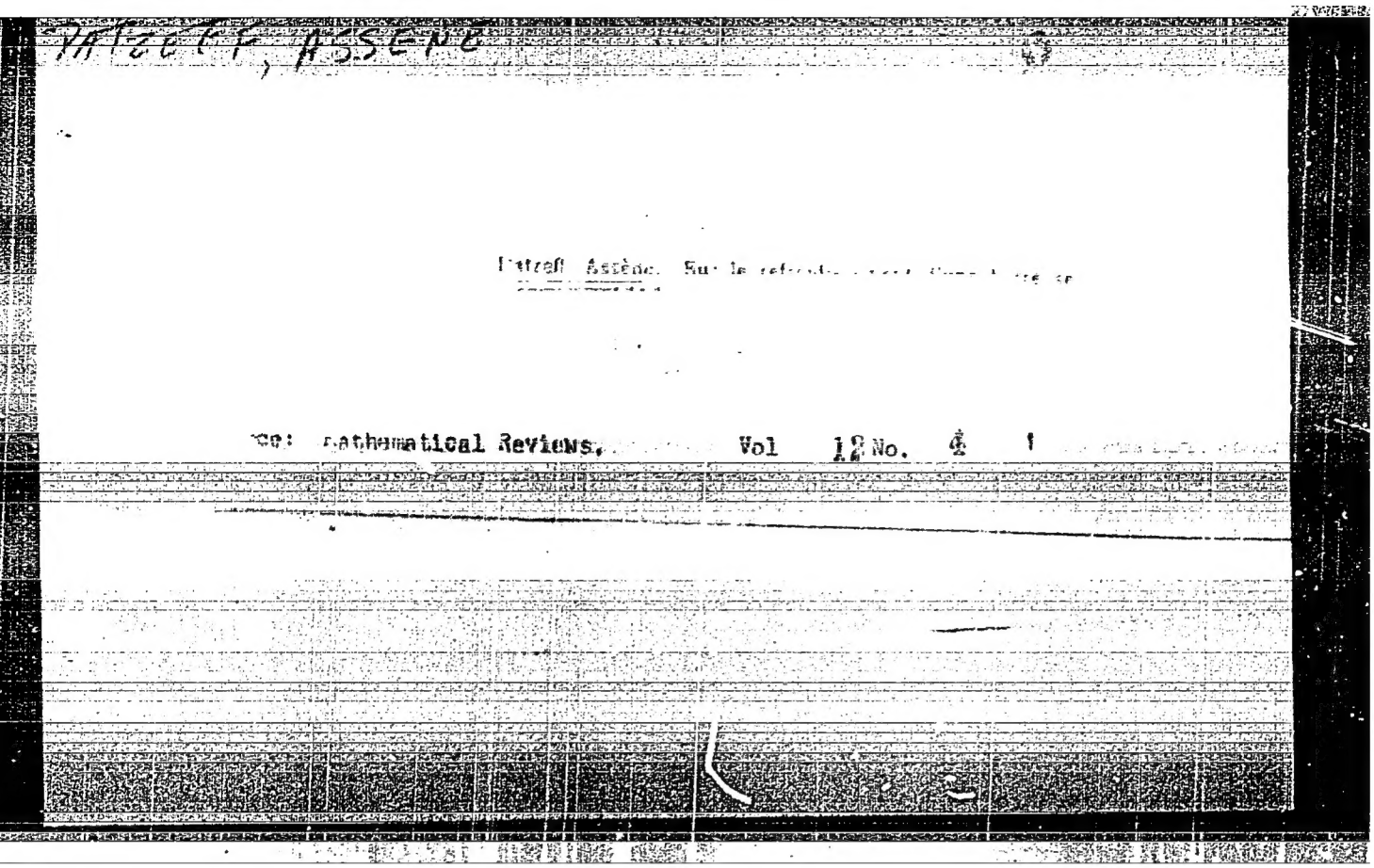
Vol [illegible] No. [illegible]

Source: Mathematical Reviews.

DATZEFF, A.

Datzeff, A. Sur le refroidissement d'un corps non homo-

Source: Mathematical Reviews Vol. 14 No. 4



DATSEV, A.

~~SURNAME (in caps)~~; Given Names

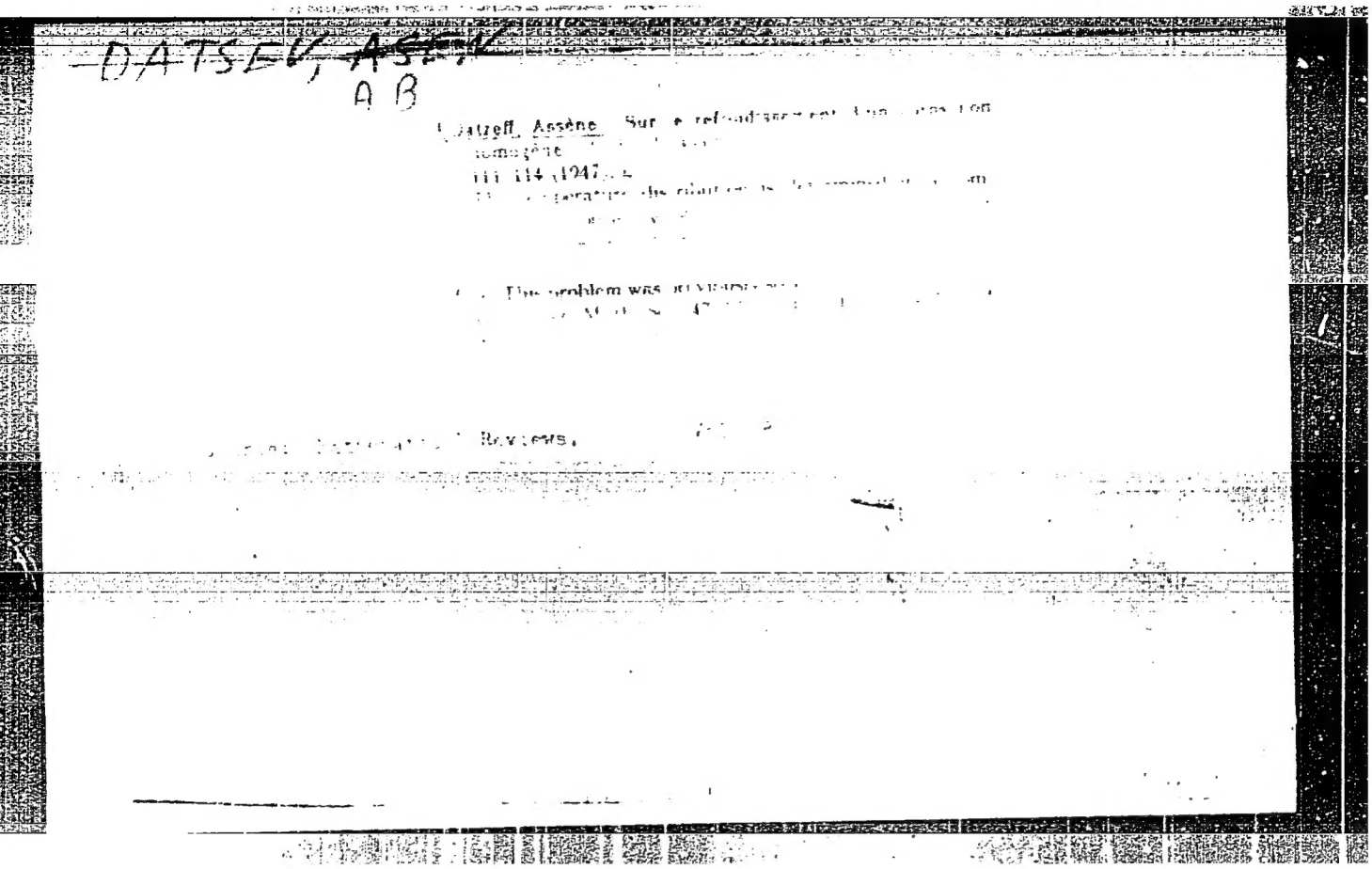
Country: Bulgaria

Academic Degrees: Academician

Affiliation: Member of the staff of Priroda

Source: Sofia, Priroda, No 1, Jan/Feb 61, pp 106-107

Data: "The 1960 Humboldt Festival in Berlin."

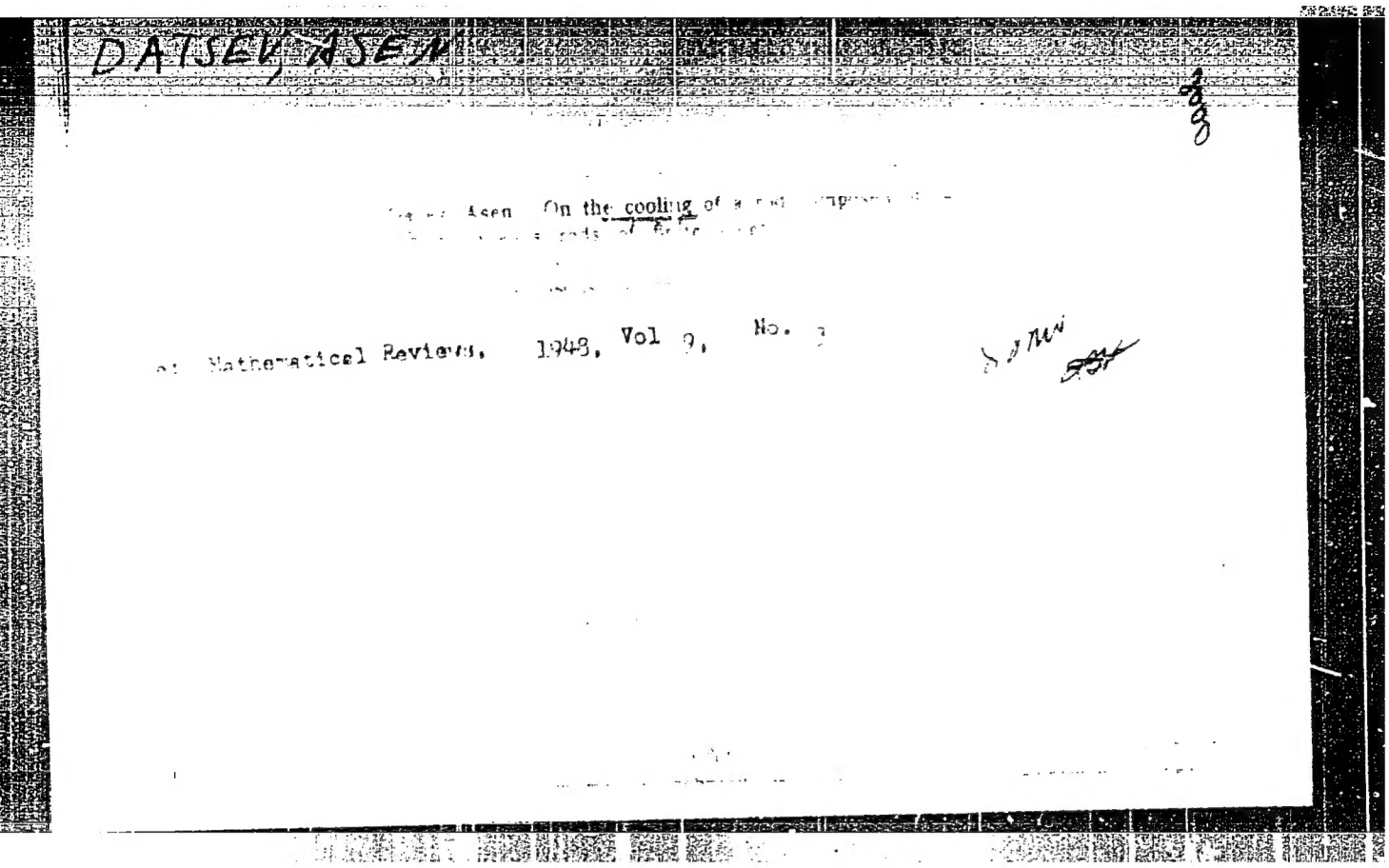


DATSEV, Assen
A B

Datzeff, Assène Sur le refoulement [illegible]
homogène
III 114 (1947) [illegible]
[illegible] opérateur [illegible]

[illegible] The problem was [illegible]

Reviews.



DATSEV, ASEN

Asen On the cooling of a [illegible]

Mathematical Reviews, 1948, Vol 9, No. 3

DATSEV, ASEN

Dacev, Asen. On the cooling of bars composed of a finite [illegible] of homogeneous parts [illegible]

[illegible] boundary conditions

(a) $u_i(x, 0) = \psi_i(x)$, [illegible]

(b) $u_i(x_i, t) = \phi_i(t)$, $u_{i+1}(x_i, t) = \phi_i(t)$, [illegible]

(c) $u_i = u_{i+1}$, $x = x_i$, $t > 0$;

(d) $k_i \partial u_i / \partial x = k_{i+1} \partial u_{i+1} / \partial x$

Denote $u(x, t)$ by $\phi_i(t)$. It is then possible [illegible] to express the solution in the form [illegible] and $\psi_i(x)$. Using (b), (d) a system of Volterra integral equations is obtained. These equations are [illegible] solution and may be used [illegible]

Mathematical Reviews, 1948, Vol 9, No. 3

DATSEV, A. B.

Dacov, A. B. On the linear problem of Stephan. Doklady Akad. Nauk SSSR (N.S.) 58, 565–566 (1947).

The author considers the partial differential equations

$$a_1^2 \partial^2 u_1 / \partial x^2 = \partial u_1 / \partial t$$

$$a_2^2 \partial^2 u_2 / \partial x^2 = \partial u_2 / \partial t$$

subject to $u_1(x, t_0) = \psi_0(x)$, $u_2(x, t_0) = \phi_0(x)$, and along the curve $x = x(t)$, $dx/dt = k_1 \partial u_1/\partial x - k_2 \partial u_2/\partial x$. The general problem is as yet unsolved. The author extends [illegible] method, however, a particular case [illegible]

[Bull. Acad. Sci. URSS. Sér. Géograph. Géophys. [illegible] Akad. Nauk SSSR] 11, 37–54 (1947). [illegible]

R. Bellman (Stanford University, Calif.)

Source: Mathematical Reviews, Vol 9 No. 7

DATZEFF, ASSENE

DATZEFF, ASSEN — Heat Propagation in a Body Composed of Several Layers

Datzeff, Assène. Sur la propagation de la chaleur dans un milieu à plusieurs couches. Annuaire [Godišnik] Univ. Sofia. Fac. Sci. Livre 1. 45, 63–91 (1949). (French. Bulgarian summary)

Consider a body composed of several homogeneous layers with the surfaces separating the layers being parallel planes. The problem of heat propagation in this body is equivalent to the corresponding problem in a thin bar A which is composed of n homogeneous parts A_i ($i=1, 2, \cdots, n$) of length l_i, the lateral surface of the bar being impermeable to heat. If the bar is thought of as extending along the x-axis such that the section A_i lies in the interval (x_{i-1}, x_i), the temperature $u_i(x, t)$ of any such section satisfies the equation (1) $a_i^2\partial^2 u_i/\partial x^2 = \partial u_i/\partial t$, where $a_i^2 = k_i/(\rho_i\sigma_i)$ with ρ_i, σ_i, and k_i being the density, specific heat, and thermal conductivity, respectively. The initial temperature is given as a function $\Phi_i(x)$ such that (2) $u_i(x, 0) = \Phi_i(x)$, $x_{i-1} < x < x_i$. The temperatures at the extremities O_0, O_n of A are given by the functions $\phi_0(t)$ and $\phi_n(t)$: (3) $u_1(x_0, t) = \phi_0(t)$, $u_n(x_n, t) = \phi_n(t)$, $t > 0$. At the points O_i common to two adjacent segments, the following conditions hold: (4) $u_i = u_{i+1}$, (4′) $k_i\partial u_i/\partial x = k_{i+1}\partial u_{i+1}/\partial x$, $x = x_i$, $t > 0$.

The problem is to find a set of functions $u_i(x, t)$ ($i = 1, \cdots, n$) satisfying equations (1), initial conditions (2), and conditions (4) and (4′) at the points $O_1, O_2, \cdots, O_{n-1}$ with u_1 and u_n satisfying conditions (3). Let $\phi_i(t)$ indicate the temperature at the point O_i and consider the functions ϕ_i as known [illegible] has the [illegible] with initial value $\Phi_i(x)$ Then [illegible] the extremities O_{i-1} and O_i where [illegible] $= U_i(x, t) + W_i(x, t)$, [illegible] $d\xi$, (7) $\Gamma_i(x, \xi, t)$

$$= \frac{1}{2l_i}\left[v_{3i}\left(\frac{x-\xi}{2l_i}, \frac{a_i^2 t}{l_i^2}\right) - v_{3i}\left(\frac{x-2x_{i-1}+\xi}{2l_i}, \frac{a_i^2 t}{l_i^2}\right)\right],$$

and

(8) $v_3(x, t) = (\pi t)^{-1/2} \sum_{\nu=-\infty}^{\infty} \exp[\text{[illegible]}(x+\nu)^2/t]$

$$= 1 + 2\sum_{\nu=1}^{\infty} \cos 2\nu\pi x \cdot \exp(-\pi^2\nu^2 t),$$

where v_{3i} represents the function v_3 on the interval (x_{i-1}, x_i). The function $W_i(x, t)$ is given [illegible]

(9) $$W_i(x, t) = -\frac{a_i^2}{l_i}\phi_{i-1}(t) * \frac{\partial v_{3i}}{\partial x}\left(\frac{x-x_{i-1}}{2l_i}, \frac{a_i^2 t}{l_i^2}\right) + \frac{a_i^2}{l_i}\phi_i(t) * \frac{\partial v_{3i}}{\partial x}\left(\frac{x_i - x}{2l_i}, \frac{a_i^2 t}{l_i^2}\right),$$

where the asterisk indicates the following convolution: (10) $\phi(t)*f(t) = \int_0^t \text{[illegible]}\, d\tau$. The function (5) satisfies

Source: Mathematical Reviews, Vol 12 No. 7

conditions (2) and the conditions (11) $u_i(x_{i-1}, t) = \phi_{i-1}(t)$, $u_i(x_0, t) = \phi_i(t)$. The functions u_i satisfy conditions (4) by the way in which they were constructed since both u_i and u_{i+1} become $\phi_i(t)$ for $x = x_i$. In order to show that (4') is satisfied it is necessary to differentiate (3) [illegible] expression which is indeterminate at [illegible] avoid this difficulty (4') is replaced by [illegible] tion: (4'') $k_i \int_0^t (\partial u_i/\partial x)\, dt = k_{i+1} \int_0^t (\partial u_{i+1}/\partial x)\, dt$ [illegible] presses the equality of the quantities of [illegible]

through the point O_i from right to left [illegible] This leads to a system of $n-1$ Volterra integral equations of the first kind for the unknowns [illegible] Having solved this system of equations [illegible] then be substituted into the appropriate [illegible] the set of functions $u_i(x, t)$ which constitute a solution of the problem. It is shown that this solution [illegible] stationary state problem is treated as a special case in which the $n-1$ integral equations of the preceding [illegible] to $n-1$ linear equations. If the end section A_n is allowed to become infinite in length while the other sections remain finite in length, the above system of interval equations become a system of Volterra integral equations of the second kind.

C. G. Maple (Washington, D. C.)

Source: Mathematical Reviews, Vol 12 No. 7

Petroff, Assène

Petroff, Assène. Sur le problème linéaire de Stefan. [illegible] Gedenkbuk, Univ. Sofia [illegible] Livre 1, 45 [illegible] 1949. (French. Bulgarian summary)

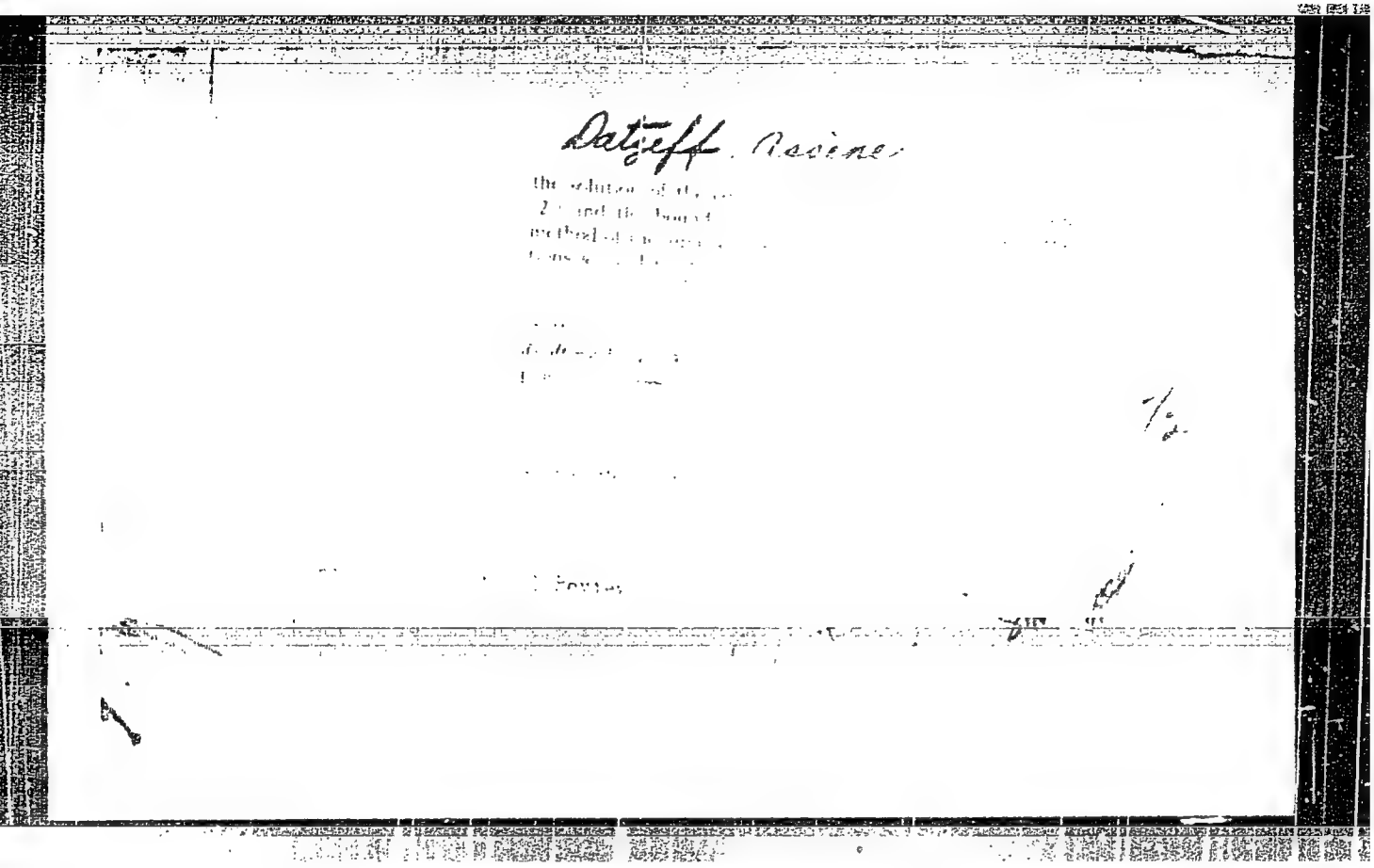
[illegible] two semi-infinite bars representing the [illegible] the temperature at [illegible] is zero for $t=t_0$. The [illegible] is varied according to [illegible] flow of heat in the [illegible] [illegible] with the [illegible] $x=s$, and the latent [illegible]

(3) $dz/dt=\epsilon(k_1\partial u_1/\partial x-k_2\partial u_2/\partial x)_{x=s(t)}$, where ϵ, k_1, and k_2 are constants. The problem is to find the three functions u_1, u_2, and $s(t)$ satisfying the equations (1), (1'), (2), (2'), and (3). The same problem may be obtained by replacing the above bodies by two bars of the same material lying along the x-axis, touching at $x=s$, if their lateral surfaces are impermeable to heat.

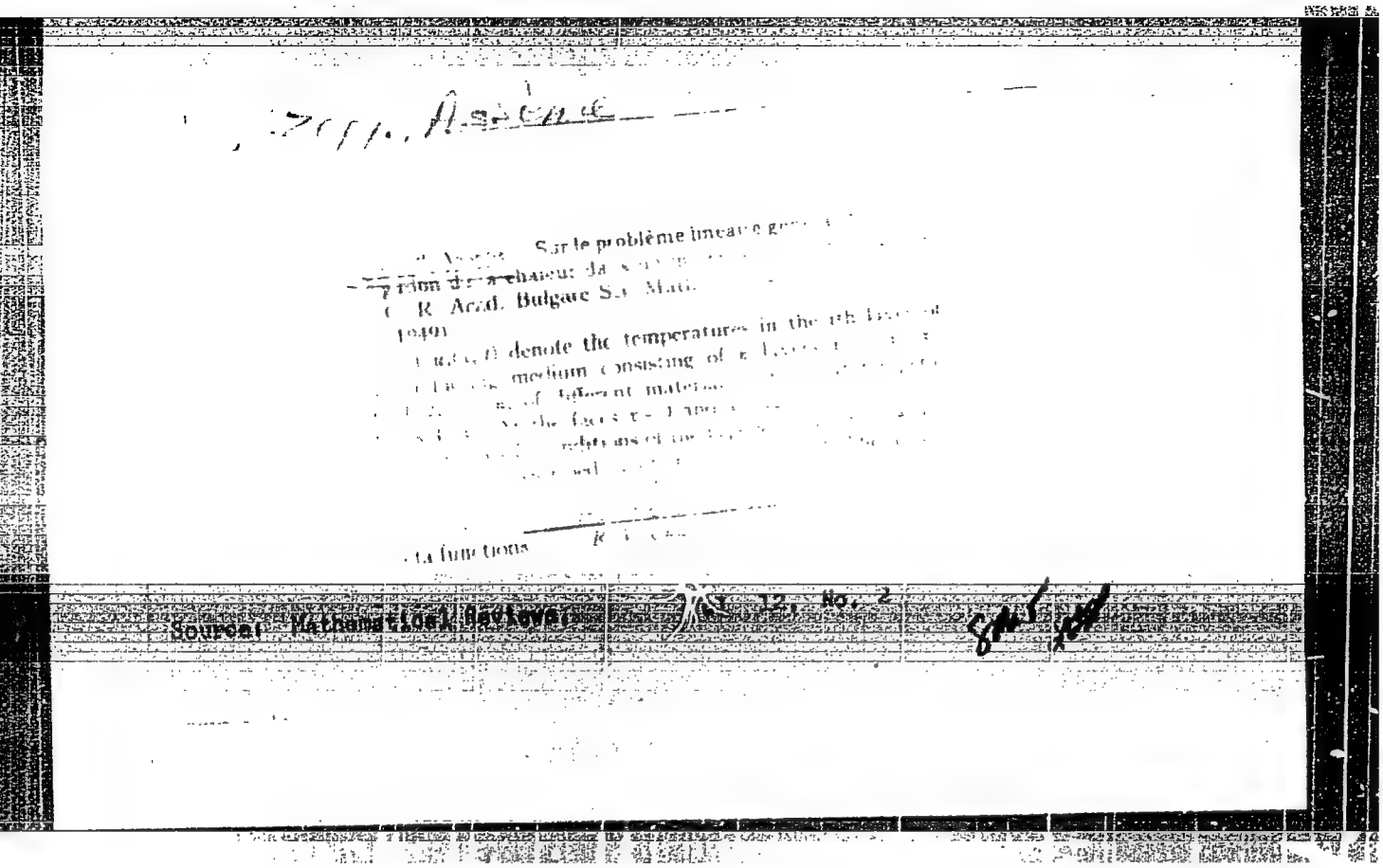
The author first solves the auxiliary problem in which he considers a single bar extending along the x-axis from $x=x_1$ [illegible] Initially the temperature is given by $\phi_0(x)$ and [illegible] valid for $t_0<t<t_1$. The solution [illegible] function $u_3(x,t)$ which is [illegible] a function $u_4(x,t)$ $(x>x_2, t_1<t\leq t_{n+1})$ which satisfies equation (4), the initial condition $u_4(x,t_i)=u_{i-1}(x,t_i)$ $(x_1<x<\infty)$ $(i=1,2,\cdots,n-1)$ and the boundary condition $u_4(x_2,t)=0$ $(t_1<t\leq t_{n+1})$. These solutions are then expressed in terms of the initial condition $\phi_0(x)$ and it is shown that the limit function $u(x,t)$ [illegible] $(n\to\infty)$ satisfies equation [illegible] and is unique.

Returning to the [illegible] problem, let u_1 represent the solution [illegible] the initial condition (2) and the boundary condition [illegible] $=0$, and let u_2 represent

Source: Mathematical Reviews, Vol. 12 No. 7



Datjeff. Racine.



Sur le problème linéaire g...

...ration d...

(R. Acad. Bulgare Sci. Math.

1949)

...denote the temperatures in the ...

...medium consisting of ...

...of different materials ...

...the faces ...

...relations of the ...

...and ...

...la fonctions

Source: Mathematical Reviews, Vol. 12, No. 2

Da Zeft, Assene

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Datzeff, Assine. Sur certaines analogies mécaniques de la théorie de la chaleur.

[illegible] the solution of the equation of diffusion [illegible] finite length [illegible]

Source: Mathematical Reviews, Vol 12, No.2

DACEV, ASEN

Dacev, Asen. The principle of indeterminacy in contemporary physics. Annuaire [Godišnik] Univ. Sofia. Fac. Sci. Livre 1. 45, 203-226 (1949). (Bulgarian)
Expository lecture.

Source: Mathematical Reviews, Vol. 12 No. 5 1

DATSEV, A. B.

PA 156T90

USSR/Physics - Conductivity, Thermal Mar/Apr 50
Mathematics, Applied

"General Linear Problem of Heat Conductivity of a Multilayer Medium," A. B. Datsev, Phys Inst, Sofia U, 14 pp

"Iz 'Ak Nauk SSSR, Ser Geograf i Geofiz" Vol XIV, No 2

Solution of problem of finding temperature distribution in bar consisting of n homogeneous parts, if initial temperatures of each rod are known and conditions at ends of rod are given by linear dependency

[redacted] 156T90

USSR/Physics - Conductivity, Thermal Mar/Apr 50
(Contd)

with variable coefficients between temperature and temperature gradient. Submitted by Acad S. I. Vavilov 14 Nov 49.

[redacted] 156T90

Dacev, A. B. **On the linear problem of Stefan. The case of two phases of infinite thickness.** Doklady Akad. Nauk SSSR (N.S.) **74**, 445–448 (1950). (Russian)

The author considers the system of partial differential equations $a^2\partial^2u/\partial x^2 = \partial u/\partial t$, $x' < x < s(t)$, $b^2\partial^2v/\partial x^2 = \partial v/\partial t$, $s(t) < x < x''$, subject to certain initial conditions. The system was first treated by Stefan in connection with [illegible] and various [illegible] have [illegible] [illegible] [illegible] [illegible] Izvestia Akad. [illegible] Rev. 8, 316] and the author [illegible] 8, 561, 580, 1947; these [illegible] 9, 513 [illegible] [illegible] interval into [illegible] [illegible] assumed independ[illegible] [illegible] each subinterval by an iteration method, and shows that [illegible] the pieced-together solution [illegible] [illegible] original equation [illegible]

Source: Mathematical Reviews, Vol 12 No. 4

DATSEV, A. B.

Dacov, A. B. [illegible] problem of Stefan [illegible] alternating phases [illegible] Nauk [illegible] 75, 631–634 [illegible]

Consider the [illegible] Stefan [illegible] the case in [illegible] there are several plane homogeneous layers of some [illegible] (such as water [illegible] which [illegible] finite number [illegible] layers are alternately [illegible] solid and liquid states. If u^h [illegible] is the temperature in the layer A_h ($h=1, 2, \ldots, r$), then [illegible] satisfies the equation (1) $a_h \partial^2 u^h / \partial x^2 = \partial u^h / \partial t$ where each a_h is constant. The initial conditions are given by (2) $u^h(x, t_0) = \Phi^h(x)$ ($x^{h-1} < x < x^h$). At the points of separation of the several layers, the conditions of constant temperature are given by

$$(3) \quad u^1[s^1(t), t] = u^2[s^1(t), t] = u^2[s^2(t), t] = \cdots = u^r[s^{r-1}(t), t] = \phi_0,$$

and the end conditions by

$$(3') \quad u^1(x^0, t) = \phi(t) > \phi_0, \quad u^r(x^r, t) = \psi(t) > \phi_0, \quad t > t_0$$

At each interior point of separation, the condition of Stefan is already satisfied

$$(4) \quad ds^h/dt = \epsilon(k_h \partial u^h/\partial x - k_{h+1} \partial u^{h+1}/\partial x)_{x=s^h(t)}, \quad h = 1, 2, \ldots, r-1,$$

where $\epsilon = (-1)^{h+1}/\rho\sigma$, σ is the specific heat and ρ the density. The problem is to find those functions $u^1(x, t)$, $u^2(x, t)$, …, $u^r(x, t)$, $s^1(t)$, $s^2(t)$, …, $s^{r-1}(t)$ which satisfy (1), (2), (3), (3'), and (4). The author uses the method of a preceding paper [same Doklady (N.S.) 74, 445–448 (1950); Annuaire [Godišnik] Univ. Sofia Fac. Sci. Livre 1. 45, 321–352 (1949); these Rev. 12, 263, 504] to give the solution of this problem. [illegible] Maple (Washington, D. C.)

Source: Mathematical Reviews, Vol 12 No. 9.

DATZEFF, Assene

Mathematical Reviews
Vol. 15 No. 3
March 1954
Analysis

7-8-54

Datzeff, Assène. Sur la propagation de la chaleur dans une barre non homogène. Annuaire [Godišnik] Fac. Sci. Phys. Math., Univ. Sofia, Livre 1, Partie II. 47, 1–32 (1952). (Bulgarian summary)

Let a non-homogeneous bar of length 1 extend along the x-axis from $x=x_0$ to $x=x'$ and let the lateral surface of the bar be impermeable to heat. The temperature $u(x, t)$ is defined by the boundary value problem

$$(1) \qquad \frac{\partial}{\partial x}\left(k\frac{\partial u}{\partial x}\right)=\rho\sigma\frac{\partial u}{\partial t},$$

where k, ρ and σ are functions of x only, and

$$(2) \qquad u(x, 0)=\Phi(x) \quad (x_0<x<x'),$$

$$(3) \qquad u(x_0, t)=\phi(t), \quad u(x', t)=\psi(t) \quad (t>0),$$

where Φ, ϕ and ψ are arbitrary bounded and integrable functions.

The method of solution is as follows: divide the interval (x_0, x') into n parts by the selection of abscissas $x_0, x_1, x_2, \cdots, x_n=x'$ and in the interval (x_{i-1}, x_i) $(i=1, 2, \cdots, n)$ replace the functions $k(x)$, $\rho(x)$, $\sigma(x)$ by the constant values $k_{in}=k(x_{i-1})$, $\rho_{in}=\rho(x_{i-1})$, $\sigma_{in}=\sigma(x_{i-1})$, respectively. Then in the interval (x_{i-1}, x_i) equation (1) is replaced by

$$(4) \qquad a^2_{in}\frac{\partial^2 u_{in}}{\partial x^2}=\frac{\partial u_{in}}{\partial t}, \quad a^2_{in}=\frac{k_{in}}{\rho_{in}\sigma_{in}} \quad (i=1, 2, \cdots, n),$$

where u_{in} is the temperature function in the interval (x_{i-1}, x_i). The conditions that must be satisfied at the interior points of the subdivision are

(5) $$u_{in}(x_i, t) = u_{i+1,0}(x_i, t),$$

(6) $$k_{in}\frac{\partial u_{in}(x_i, t)}{\partial x} = k_{i+1,n}\frac{\partial u_{i+1,0}}{\partial x}(x_i, t).$$

At the ends it is required that

(7) $$u_{1n}(x_0, t) = \phi(t), \quad u_{mn}(x', t) = \psi(t), \quad (t > 0).$$

The solutions to problems (4) subject to the appropriate conditions from (5), (6) and (7) are found by a method discussed in previous papers. [See Datsoff, these Rev. 9, 146, 147; 12, 263, 504].

The solution to the problem given by (1), (2) and (3) is found from the above by passing to the limit as $n \to \infty$. It is shown that: (a) the sequence $u_{in}(x, t)$ is bounded for fixed n, that is, $|U_{in}(x, t)| < M$ $(x_0 < x < x', t > 0; i = 1, 2, \ldots, n)$, (b) the $\lim_{n\to\infty} u_{in}(x, t)$ satisfies equation (1), (c) the sequence $\{u_{in}(x, t)\}$ has a limit as $n \to \infty$, (d) the boundary conditions are satisfied, and (e) the solution is unique. The particular case for which $\partial u/\partial t = 0$ is solved for the boundary conditions $u(x_0) = C_0$, $u(x') = C'$ and the solution is shown to be attainable as special case of the solution of the more general problem defined by (1), (2) and (3).

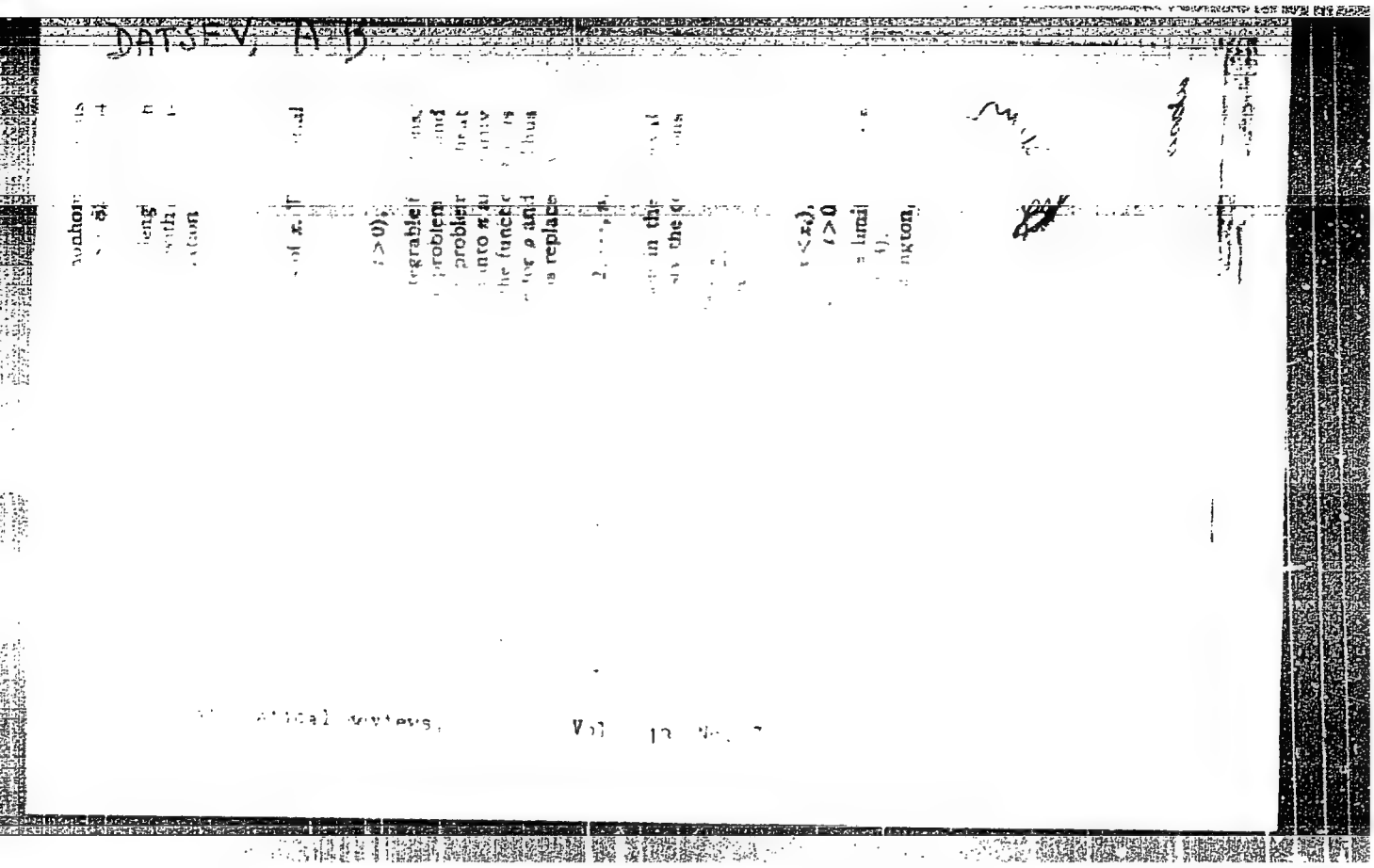
The results are extended to include the case for which the length of the bar is infinite. Another extension enables the author to apply the method to obtain a solution of the problem defined by (1), (2) with the boundary conditions (3) replaced by

(8) $$\frac{\partial u}{\partial x}(x_0, t) + \alpha_0(t)u(x_0, t) + \beta_0(t) = 0,$$

$$\frac{\partial u}{\partial x}(x', t) + \alpha_1(t)u(x', t) + \beta_1(t) = 0,$$

where α_0, α_1, β_0, β_1 are bounded integrable functions for $t > 0$.

C. G. Maple (Ames, Iowa).



DATSEV, A. B.

PA 245T102

USSR/Physics - Phase State 21 Nov 52

"Appearance of Phase in the Linear Stefan Problem," A. B. Datsev, Sofia U, Sofia, Bulgaria

"Dok Ak Nauk SSSR" Vol 87, No 3, pp 353-356

In previous works ("Dok Ak Nauk SSSR" 1949 - 1950) the author solved the linear Stefan problem (problem of solidification) for rather general conditions by means of a method which he developed, for the case where the initial lengths of the phases are finite.

245T102

In this article the author solves the previously unsolved problem of the appearance of a new phase. Submitted by Acad S. L. Sobolev 25 Sep 52.

245T102

DATSEV, A.

The propagation of heat in a multistrata media in the case of two or three dimensions. In French. p. 139. (GODISHNIK. MATEMATIKA I FIZIKA, Vol. 49, No. 1, 1954/55 (published 1956), Sofia, Bulgaria)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 9, Sep 1957. Uncl.

DATSEV, A.B.

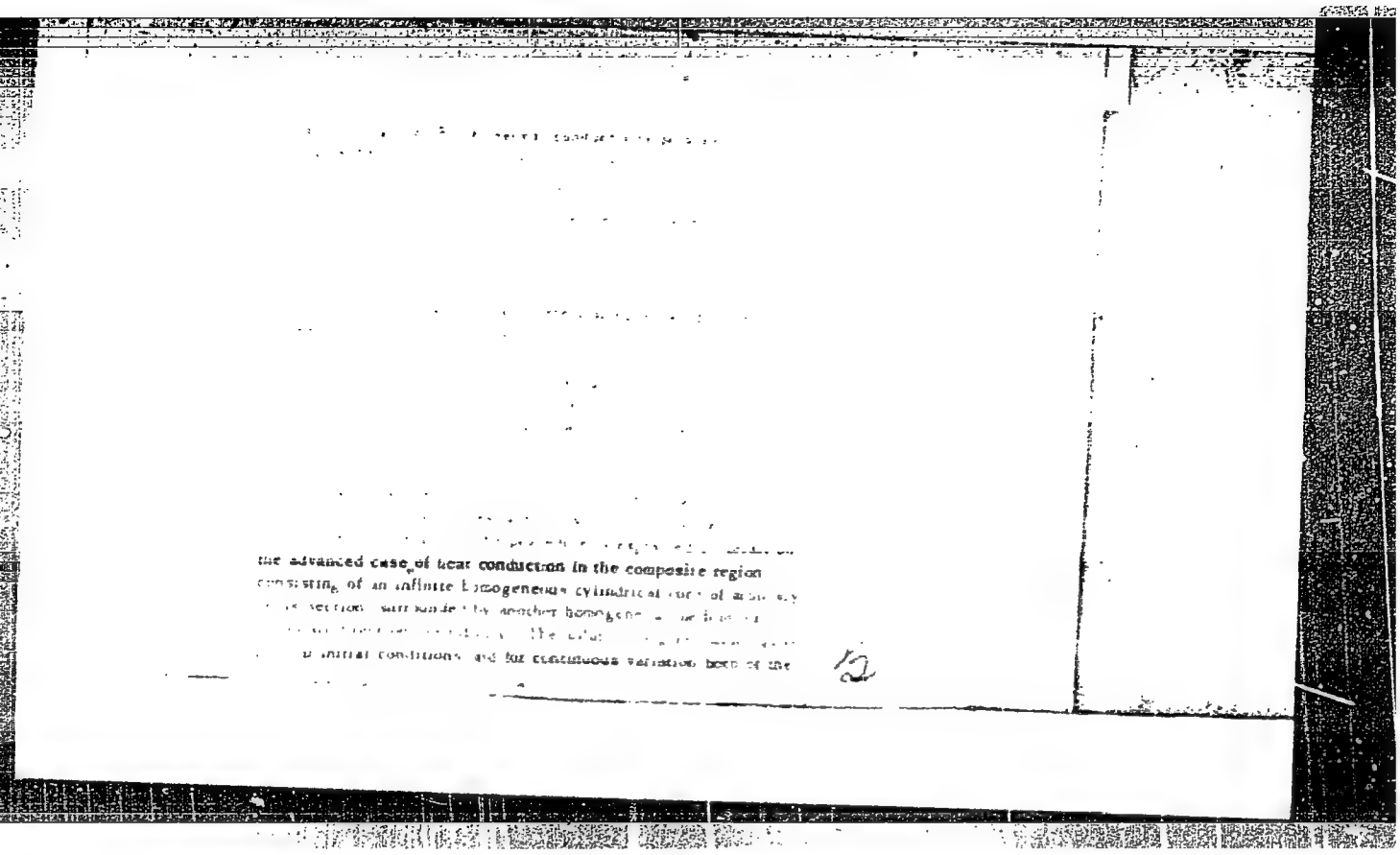
SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/2 PG - 334
AUTHOR DACEV A.B. 335
TITLE On the two-dimensional Stefan's problem.
On the three-dimensional Stefan's problem.
PERIODICAL Doklady Akad. Nauk 101, 441-444 (1955)
Doklady Akad. Nauk 101, 629-632 (1955)
reviewed 10/1956

In the two-dimensional case functions $u^{(1)}$, $u^{(2)}$, s, f, g are required which satisfy the conditions

$$a_m^2 \Delta u^{(m)} = \frac{\partial u^{(m)}}{\partial t}, \quad u^{(m)}(x,y,t_o) = \phi_m(x,y), \quad u^{(m)}(L) = 0, \quad m = 1,2,$$

$$f_t'^2 + g_t'^2 = s_t'^2, \quad f_t' f_\alpha' + g_t' g_\alpha' = 0, \quad \frac{ds}{dt} = l\left(k_1 \frac{\partial u^{(1)}}{\partial \nu} - k_2 \frac{\partial u^{(2)}}{\partial \nu}\right)_{\substack{x=f(\alpha,s(\alpha,t)) \\ y=g(\alpha,s(\alpha,t))}}$$

Here $u^{(1)}$ and $u^{(2)}$ are the temperatures of two states of aggregation of the same material which are separated by the curve l. In the course of time l describes the surface L. The second equation is the initial condition, the third one the boundary condition. The orthogonal trajectories of the curves l(t) on L are $x = f(\alpha, s(\alpha,t))$, $y = g(\alpha, s(\alpha,t))$, where $s(\alpha,t)$ is the



the advanced case of heat conduction in the composite region
consisting of an infinite homogeneous cylindrical
section surrounded by another homogeneous
initial conditions and for continuous variation both of the

12

A.b.

...rature and of the flux at the surface of separation of the two media. The method can be applied also for other types of the space coordinations.

Paper is a substantial contribution to theoretical treatment of advanced problems of heat conduction. Of course, practical ... may be very complicated.

V. Vodička, Czechoslovakia

DATSEV, A. B.

USSR/Physics - Heat conductivity

Card 1/1 Pub. 22 - 11/47

Authors : Datsev, A. B.

Title : On the three-dimensional multilayer problem of heat conductivity

Periodical : Dok. AN SSSR 101/6, 1019 - 1021, Apr. 21, 1955

Abstract : The method for solving the heat conductivity equation developed by the author for one and two-dimensional cases is now generalized for the three-dimensional multilayer cases. Four USSR references (1947-1955).

Institution : State University, Sophia, Bulgaria

Presented by: Academician S. L. Sobolev, January 7, 1955

DATSEV, A.B.

Interpretation of quantum mechanics. Godishnik fiz mat 53 no.2: 31-46 '58/'59 [publ. '60].

BULGARIA/Atomic and Molecular Physics - Statistical Physics. Thermodynamics. D

Abs Jour : Ref Zhur Fizika, No 2, 1960, 3214

Author : Datzeff, A.B.

Inst : The University, Sofia, Bulgaria

Title : Concerning One Case of Motion of Molecules

Orig Pub : Dokl. Bolg. AN, 1959, 12, No 2, 105-108

Abstract : The author considers the motion of non-interacting point molecules, contained in a rectangle, which are reflected from the walls as elastic spheres. It is assumed that at the initial instant of time $t = 0$ the molecules are located in a circle and have identical radial velocity. It is shown (without statistical considerations) that the distribution of the molecules tends to equilibrium at $t \to 0$.

Card 1/1

S/058/62/000/005/007/119
A160/A101

AUTHOR: Datsev, A. B.

TITLE: The interpretation of quantum mechanics. II. The determination of the probability of locating a particle at a given point

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 16, abstract 5A182 ("Godishnik Sofiysk. un-t. Fiz.-matem. fak", 1959-1960 (1961), 54, no. 2, 121-142, Bulgarian; French summary)

TEXT: As in part I (RZhFiz, 1961, 2A204), considered is an attempt of introducing in physics ether of a discrete kind, called by the author subvacuum. This subvacuum is considered a "material carrier" of the field. The elements of which the subvacuum consists may be grouped; they form the particles and the field. Hereby, all values characterizing the particle or the field may fluctuate. Thus, the particle, reacting with the field, possesses some state of motion characterized by the probability W (x, y, z) of locating a particle at a given point (x, y, z). The function represented in a form of the square of function F for which the equation of Schroedinger was obtained.

A. Temkin

[Abstracter's note: Complete translation]

Card 1/1

S/058/62/000/005/008/119
A160/A101

AUTHOR: Datsev, A. B.

TITLE: The interpretation of quantum mechanics. III. The relations of indeterminancy. Observation and reality.

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 17, abstract 5A183 ("Godishnik Sofiysk. un-t. Fiz.-matem. fak.", 1959-1960 (1961), 54, no. 2, 143-175. Bulgarian; French summary)

TEXT: The author believes that the mathematical apparatus set forth by his theory (part II, see Ref. 5A182) leads to the same results as the non-relativistic quantum mechanics, and, among others, also to the Heisenberg principle of indeterminancy. Hereby, the principle of correspondence is used. However, the author assumes that, regardless of the identity of the mathematical apparatus, the obtained results have another sense than in quantum mechanics, since they are based on the classical concepts of causality.

A. Temkin

[Abstracter's note: Complete translation]

Card 1/1

DATSEV, Asen B., akad.

Academician Kiril Popov, laureate of the Dimitrov Award. Fiz mat spisanie BAN 5 no.2:149-150 '62.

1. Chlen na Redkatsionnata kolegiia, "Fiziko-matematichesko spisanie".

DATSEV, A.B.

Conference on the Theory of Solid Body in Moscow. Fiz mat spisanie BAN 7 no.1:70-71 '64.

DATSEV, An. B., akad.

Honoring Galileo in East Germany. Fiz mat spisanie BAN 7 no.2: 152 '64.

DATSEV, P. (Rybinsk); KOTIKOV, I. (pos.Revda, Murmanskaya obl.); MIKHAYLIK, P. (Sukhumi); KONOSHENKO, A. (Arkhangel'sk); BOGDANOV, T. (Syktyvkar, Komi ASSR); VISKOV, V. (Chelyabinsk); SEREGIN, S. (Vorkuta)

Are stationary fire escape ladders necessary? Pozh.delo 8 no.6:26 Je '62. (MIRA 15:6)

(Fire escapes)

DATSEVICH, L. I., (Scientific Co-Worker, State Scientific-Control Insitute of Veterinary Preparations)

"Identification of Brucella types by a method of differential staining."

Veterinariya, Vol 39, no. 1, Jan 1962. pp 79

IVANOV, M.M.; DATSEVICH, L.I.

Method for the quantitative determination of live Brucella in brucellosis vaccine. Zhur.mikrobiol., epid. i immun. 33 no.3: 46-50 Mr '62. (MIRA 15:4)

1. Iz Gosudarstvennogo nauchno-kontrol'nogo instituta veterinarnykh preparatov Ministerstva sel'skogo khozyaystva SSSR.
(BRUCELLA) (VACCINES)

DATSEVICH, L.I., nauchnyy sotrudnik

Determining Brucella types by differential staining. Veterinariia 39 no.1:79-80 Ja '62. (MIRA 15:2)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov.

(Brucella)
(Stains and staining (Microscopy))

FEDENYUK, A. I. ; DATSEVICH, M. A.

Agricultural Machinery

Using the simplest mechanism for stacking hay. M. A. Datsevich, A. I. Fedenyuk. Korm. baza 3, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

DAISIKOV, V. V.

Chaplin, N. M. and Datsikov, V. V. - "Water supply for animal husbandry in Kara-Kum, Turkmen SSR," Trudy (Vsesoyuz. nauch.-issled. in-t gidrotekhniki i melioratsii), Vol. XXV, Issue 2, 1948, p. 100-22

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

VISHNEVSKIY, V.N. [Vyshnevs'kyi, V.N.]; LYSKOVICH, A.B. [Lyskovych, O.B.]; PIDZYRAYLO, N.S. [Pidsyrailo, M.S.]; DATSISHIN, A.M. [Datsyshyn, A.M.]

Photoluminescence excitation spectra of NaI(Tl) crystals. Ukr. fiz. zhur. 7 no.10:1127-1128 O '62. (MIRA 16:1)

1. L'vovskiy gosudarstvennyy universitet im. I.Franko.
(Phosphors) (Spectrum analysis)

BEZBORODOVA, A.; DATSIV, V.; VANYUKOV, K.

Practices of apartment-house offices in taking care of children. Zhil.-kom. khoz. 8 no.12:20-21 '58. (MIRA 13:1)

1.Sekretar' Chelyabinskogo gorkoma komsomola (for Bezborodova). 2.Sekretar' Ufimskogo gorkoma komsomola (for Datsiv). 3.Predsedatel' roditel'skogo komiteta pri zhilishchnoy kontore No.3 Petrogradskogo rayona Leningrada.
(Children--Management)

-: DATSKEVICH, A. A.

USSR/Physics of the Earth - Geophysical Prospecting, 0-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36442

Author: Datskevich, A. A.

Institution: None

Title: Testing Seismic Receivers

Original Periodical: Prikl. geofizika, 1956, No 14, 47-64

Abstract: A seismic receiver is considered as an electromechanical 4-terminal network, the input side of which is characterized by the applied force and a velocity, and the output by a current and a voltage. The connection existing between the input and output quantities is examined. The seismic receiver, when tested, is connected electrically through a resistance box to an audio frequency oscillator and is set on a special test stand, comprising 2 ebonite discs and 3 piezoelectric transducers made of Rochelle salt, compressed between the discs. The test stand is mounted on a heavy foundation. The piezoelectric transducers of the test stand are

Card 1/2

DATSKEVICH, A.A.

3(5) PHASE I BOOK EXPLOITATION SOV/2819

Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki

Razvedochnaya i promyslovaya geofizika, vyp. 23 (Exploration and Industrial Geophysics, Nr 23) Moscow, Gostoptekhizdat, 1958. 77 p. (Series: Obmen proizvodstvennym opytom) Errata slip inserted. 4,000 copies printed.

Ed.: A.I. Bogdanov; Exec. Ed.: Ye.G. Pershina; Tech. Ed.: A.S. Polosina.

PURPOSE: This booklet is intended for geophysicists as well as engineering and technical personnel in the petroleum industry.

COVERAGE: This collection of articles describes new equipment and instruments used in the petroleum industry. Individual articles discuss the single-cable electronic thermometer and the magnetic logging locator. Regional exploration problems such as electrical sounding at sea, electrical survey in permafrost areas etc. are also treated. References accompany each article.

TABLE OF CONTENTS:

Card 1/2

AVAILABLE: Library of Congress

Card 2/2 MM/mg 12-31-59

DATSKEVICH, A. A.

11(4) PHASE I BOOK EXPLOITATION SOV/2124

Mezhvuzovskoye soveshchaniye po voprosam novoy tekhniki v neftyanoy promyshlennosti. Moscow, 1956

Razvedka i razrabotka neftyanykh i gazovykh mestorozhdeniy; materialy soveshchaniya, tom. 1 (Prospecting and Development of Oil and Gas Deposits; Papers of the Inter-Vuz Conference on New Techniques in the Petroleum Industry, Vol 1) Moscow, Gostoptekhizdat, 1958. 311 p. Errata slip inserted. 1,500 copies printed.

Eds.: I. M. Murav'yev, Professor, Doctor of Technical Sciences, and V. N. Dakhnov, Professor, Doctor of Geological and Mineralogical Sciences; Editorial Board: K. F. Zhigach, Professor (Resp. Ed.), I. M. Murav'yev, Professor, A. A. Tikhomirov, Candidate of Economical Sciences, V. I. Yegorov, Candidate of Economical Sciences, M. M. Charygin, Professor, F. F. Dunayev, Professor, N. I. Chernozhukov, Professor, Ye. M. Kuzmak, Professor, I. A. Charnyy, Professor, G. M. Panchenkov, Professor, V. N. Dakhnov, Professor, Doctor of Geological and Mineralogical Sciences, N. S. Nametkin, Doctor of Chemical Sciences, N. A. Almazov, Docent, V. N. Vinogradov, Candidate of Technical Sciences, V. I. Biryukov, Candidate of Technical Sciences, E. I. Tagiyev, and V. M. Gurevich; Executive Ed.: N. P. Dobrynina; Tech. Ed.: E. A. Mukhina.

PURPOSE: The book is intended for engineers and scientific personnel working in the petroleum industry and vtuzes. It may also serve as a textbook for advanced students of petroleum vtuzes.

COVERAGE: The book contains articles written by staff members of the Moscow, Groznyy, and Ufa Petroleum Institutes, the Kuybyshev and Azerbaydzhan Industrial Institutes, the UfNII (Ufa Scientific Research Institute), VNIIburneft' (All-Union Scientific Research Institute of Oil Drilling), KBNP (Design Office of Petroleum Instrument Making), the Bashneft Association (Bashkiriya Petroleum). These papers, read at the Mezhvuzy (Inter-Vuz) Scientific Conference, deal with new techniques in the petroleum industry introduced since 1956. Emphasis is given to the importance of efficient drilling, geophysical prospecting, working of oil and gas deposits, and the use of new devices employed in oil and gas exploitation. There are 52 references: 44 Soviet, and 8 English.

Zhigach, K. F., L. K. Mukhin, V. N. Demishev, and N. N. Goncharov [Moscow Petroleum Institute]. Petroleum-Base Drilling Fluids 92

The authors state that petroleum-base drilling fluids are being used to open productive horizons to maintain the penetration rate at the bottom-hole zone, and to increase the well output. The use of petroleum-base drilling fluids is particularly efficient for opening formations with high permeability and low pressure, where the absorption of a large amount of mud by the productive formation may prove dangerous. Petroleum-base drilling fluids also prove useful in opening formations with low permeability, particularly where the formation contains swelling clay. Petroleum-base drilling fluids produce good results in drilling under complex geological conditions and in drilling deep and directional wells.

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5(3)

AUTHORS: Datskevich, A. A., Zhukhovitskiy, A. A., Turkel'taub, N. M.

SOV/32-25-2-40/78

TITLE: Apparatus and Technical Equipment for Laboratory Work (Pribory i tekhnika laboratornoy raboty). Sorption-Thermal Apparatus for the Analysis of Gas Mixtures(Sorbtsionno-termicheskiye pribory dlya analiza gazovykh smesey)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, pp 210 - 212 (USSR)

ABSTRACT: The use of stationary chromathermography (CTG) permits the thermal enrichment to take place simultaneously with a breadthwise enrichment, since the adsorption zones tend to gradually be compressed. These localized zones make it possible to carry out automatically both a quantitative and qualitative analysis. A thermodynamical apparatus KhT-2 has been designed which permits analyses by three methods: stationary (CTG) with continuous or intermittent gas supply, and non-stationary (CTG). It is possible to analyze multi-component gas mixtures of saturated and unsaturated hydrocarbons and their isomers through C_6 as well as low-boiling

Card 1/2

gases. The taking of samples and pressure are automatically controlled by a timer and pressure regulator, and the component quantities contained in the mixture are recorded by an electron potentiometer EPP-09. The apparatus (Fig 1) consists of a separating column with a dosing unit, gas analyzer, and a stand for the recording instruments and control panels. Silica gel or aluminum oxide are used as sorbents, the gas carrier is purified air. A diagram of the analysis of an ethane-ethylene-propane-propylene-isobutane-butane mixture is given (Fig 2). The apparatus KhT-3 has been designed to afford more flexibility in the analyses. It is based on combined use of distribution and adsorption chromatography and (CTG). It was designed on the principle of the separation and analysis setup of the universal chromathermograph VNIGNI (Ref)(Fig 3). A model of this setup (without an automatic arrangement) was tested simultaneously with the KhT-2 apparatus in the gas-logging in the Saratov area and at the Moskovskiy neftyanoy pererabatyvayushchiy zavod (Moscow Petroleum Refining Plant). There are 3 figures and 4 Soviet references.

ZHUKHOVITSKIY, A.A., otv.red.; VAGIN, Ye.V., red.; GOL'BERT, K.A., red.; DATSKEVICH, A.A., red.; TURKEL'TAUB, N.M., red.; YESEHKO, Ye.P., red.; YANOVSKIY, M.I., red.; VLASOV, L.G., red.izd-va; ASTAF'IEVA, A.G., tekhn.red.

[Gas chromatography; transactions of the First All-Union Conference on Gas Chromatography] Gazovaia khromatografiia; trudy Pervoi Vsesoyuznoi konferentsii po gazovoi khromatografii. Moskva, Izd-vo Akad.nauk SSSR, 1960. 326 p. (MIRA 14:3)

1. Vsesoyuznaya konferentsiya po gazovoy khromatografii. 1st, Moscow, 1959.

(Gas chromatography)

83688

S/032/60/026/009/002/018
B015/B058

11,3000

AUTHORS: Datskevich, A. A., Zhigacheva, L. P., Krasnova, G. V., Lapitskaya, M. D., Latukhova, A. G., Moshinskaya, M. B.

TITLE: Determination of Small Amounts of Hydrogen in Helium

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 9, pp. 1082 - 1083

TEXT: A method of determining hydrogen in helium according to the adsorption development chromatography was elaborated. The experiments were made on a XT-2M (KhT-2M) chromatographic instrument with a developer based on the thermochemical principle (Ref. 1). The working conditions were selected in such a way that a detector could determine both components by two characteristics, i.e., helium by the thermal conductivity and hydrogen by the heat of combustion. A 6 m long metallic separation column, filled with CKT (SKT) coal and with air as carrier gas, was used for analyses at room temperature. The sensitivity to hydrogen amounted to 0.5% at a relative accuracy of 5%. A 10 m long polyvinyl chloride tube was used for analyses at low temperatures and work was carried out

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83688

Determination of Small Amounts of Hydrogen in Helium

S/032/60/026/009/002/018
B015/B058

at - 35°C, making it possible to obtain a better separation and to use larger sample quantities, so that the sensitivity rose to 0.05%. A comparison of the measuring results on the KhT-2M instrument with those obtained at a combustion over copper oxide is tabulated. There are 2 figures, 1 table, and 1 Soviet reference.

4

ASSOCIATION: Konstruktorskoye byuro avtomatiki i telemekhaniki (Design Office for Automation and Telemechanics). Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut (All-Union Petroleum Scientific Research Institute of Geological Survey). Moskovskiy zavod szhizheniya prirodnogo gaza (Moscow Plant for Liquefying Natural Gas)

Card 2/2

KOTEL'NIKOV, B.P., inzh.; DATSKEVICH, A.A., kand.tekhn.nauk

Method of determining the composition of mixtures of fatty acids and aliphatic alcohols. Masl.-zhir.prom. 26 no.5:20-26 My '60. (MIRA 13:12)

(Acids, Fatty) (Alcohols)
(Gas chromatography)

L 11957-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4/Ps-4 SSD/AFDC(b)/AFDC(a)/
AS(mp)-2/ASD(p)-3 RM/MLK

ACCESSION NR: AT4043191 S/0000/64/000/000 0099/0108

AUTHOR: Alekseyeva, A. V., Berman, S.S., Gol'bert, K. A., Datskevich, A. A., Moshinskaya, M. B., Fomina, A. I.

TITLE: Determination of trace impurities in monomers

SOURCE: Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po gazovoy khromatografii. 2d, Moscow, 1962. Gazovaya khromatografiya (Gas chromatography); trudy* konferentsii. Moscow, Izd-vo Nauka, 1964, 99-108

TOPIC TAGS: monomer analysis, impurity determination, gas chromatography, flame ionization detector, molecular sieve, thermal conductivity detector

ABSTRACT: The paper concerns the determination of trace impurities in ethylene and propylene to be used as raw materials for polymers and copolymers. Light impurities (H_2, N_2, O_2, CO_2, CH_4) were determined with the thermal conductivity detector G-9, heavy impurities with the flame ionization detector. The sensitivity was increased considerably by the use of programmed temperatures. The determination of light impurities is based on the enrichment effect obtained when the impurities are adsorbed to a lesser degree than the main component; the width of the band of heavy components was determined by the coefficient of their adsorbability from the mixture, that of the light

Card 1/3

L 14957-65

ACCESSION NR: AT4048191

impurities by the spread of the adsorptive zone of the main component (ethylene, propylene). Formulas for finding the enrichment value are presented. Two adsorption columns were used, the first for enrichment, the second for separation. Separation of N_2 and O_2 required the use of a molecular sieve in the column, with silica gel as the adsorbent. With small loads the degree of enrichment increased linearly with the amount of the specimen introduced, but there was a limit to the latter. Simultaneous tests were conducted with the concentrator at temperatures of -17 and 20C and with the molecular sieves at 80C, with satisfactory results. Heavy impurities (C_1-C_4) were satisfactorily separated on, for example, aluminum oxide [illegible] diethanodiethylsulfide using the flame-ionization detector made by OKBA [illegible] rick and tripolite other modifiers were also tested. This work served as a basis for the development [illegible] KhTM-1 chromatograph (1961). The apparatus is described and illustrated schematically. It was concluded that programming [illegible] to a several-fold increase in the heights of the peaks, but that [illegible] with a very pure carrier gas. Various adsorbents may be used. Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: None

Card 2/3

L 14957-65

ACCESSION NR: AT4048191

SUBMITTED: 16Jul64 ENCL: 00 SUB CODE: GC, NP

NO REF SOV: 001 OTHER: 000

Card 3/3

ZHUKHOVITSKIY, A.A.; LAPKIN, L.M.; DAITSKEVICH, A.A.

Zero line in vacantochromatography as a basis of continuous doseless analysis. Dokl. AN SSSR 162 no.5:1089-1091 Je '65. (MIRA 18:7)

1. Moskovskiy institut stali i splavov. Submitted November 30, 1964.

DATSKEVICH, L. A.

(6)

5064. Copolymerisation reaction of [illegible] with glycols. V. A. STRELIKHEEV, L. A. GRIBOVA, I. P. LOSEV, V. V. KORSHAK, B. M. [illegible], and L. A. DATSKEVICH. *Khim. i Fiz. Khim. Vysokomolekul. Soedinenii: Doklady 7-oi Konf. Vysokomolekul. Soedineniyam* 1953, 59-67; *Chem. Abs.*, 1953, 47, 7820. The copolymerisation of diphenylmethylene diisocyanate with 1, 4-butanediol was investigated and an expression deduced for the mol.wt. of the product. The highest mol. wt. is attained near the equimolecular proportion of monomers. Addition of an alcohol or piperidine causes a severe drop in mol. wt. The viscosity of the mixture becomes constant after about 10 hrs. at 130° to 175° C. Tertiary amines catalyse the reaction, and the highest viscosities are produced in xylene or chlorobenzene solution. The product is a solid of mol. wt. up to 34,600, melting at about 182° and decomposing above 215° C. SSEMANIS

Rubber abst.
V-3) Dec 1953
Synthetic Rubbers
and Like Products

MF 1-27-54

LOSEV, I.P.; DATSKEVICH, L.A.

Polyurethan films. Biul. tekhn.-ekon. inform. no.8:10-11 '58.
(MIRA 11:10)

(Plastics) (Carbamic acid)

87433
S/191/60/000/010/005/017
B004/B060

158460

AUTHORS: Losev, I. P., Datskevich, L. A., Mayboroda, V. D.

TITLE: Synthesis and Investigation of Foam Plastics From Polyesters of Terephthalic Acid and 2,4-Toluylene Diisocyanate

PERIODICAL: Plasticheskiye massy, 1960, No. 10, pp. 14-16

TEXT: The authors based on Western papers to synthesize foam plastics from polyesters of terephthalic acid and 2,4-toluylene diisocyanate. The polyesters were synthesized by allowing diethylene glycol, triethylene glycol or glycerin to enter into reaction with dimethyl terephthalic acid in the presence of 1% NaOH in a ratio of 2 : 1 to 1.2 : 1 in nitrogen atmosphere with a slow increase (16 h) of temperature to 200°C. A mixture was prepared from the polyester (molecular weight 700-1500, hydroxyl number 400-80), the emulsifier OP-10 (OP-10), water, and triethyl amine, 30-50% 2,4-toluylene diisocyanate was added under vigorous stirring, and the mixture was then allowed to harden at 70-80°C in a thermostat. The weight by volume was controled by the water addition:

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Synthesis and Investigation of Foam Plastics From Polyesters of Terephthalic Acid and 2,4-Toluylene Diisocyanate

S/191/60/000/010/005/017
B004/B060

g water per 100 g polyester	0.5	1.0	2.0	3.0	4.0	5.0
weight by volume of foam plastic, kg/m^3	183	113	72	60	57	52

The total volume of pores amounted to 91-97% of the sample volume. The maximum water adsorption (in compliance with ГОСТ 4650-49, GOST 4650-49) amounted to 20-30 g/dm^3. The compressive strength was determined according to ГОСТ 4651-49 (GOST 4651-49), the bending strength according to ГОСТ4648-56 (GOST 4648-56)(5.4 kg/cm^2 for 60 kg/m^3 weight by volume), and the intrinsic resilience according to ГОСТ 4647-55 (GOST 4647-55). The heat resistance, determined according to Zhurkov, was 100-130°C. All foam plastics were hardly inflammable and were quickly extinguished after removal from the flame. Foam plastics with weight by volume 160-220 kg/m^3 are usable in civil construction, aircraft and automobile building. The plastics with weight by volume 50-100 kg/m^3 are suitable for heat insulation and as floating materials. There are 16 references: 2 Soviet, 5 US, 3 British, and 6 German.

Card 2/2

DATSKEVICH, L.A.; LIBEROVA, R.A.; LOSEV, I.P.; PLOTNIKOV, I.V.; SVOYKINA, A.S.; TSVETKOVA, N.A.

Studying the effect of the primary polyatomic alcohols on the properties of polyester urethane lacquers. Lakokras.mat.i ikh prim. no.2:22-26 '62. (MIRA 15:5)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva i Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh materialov i iskusstvennoy kozhi.
(Lacquers and lacquering--Testing)

ACCESSION NR: AT4033988 S/0000/63/000/000/0073/0075

AUTHOR: Datskevich, L. A.; Mayboroda, V. D.; Losev, I. P. (Deceased)

TITLE: Synthesis and analysis of polyester urethans containing phosphorus. I. Reaction of phenylphosphoric acid dichloroanhydride with diethylene glycol

SOURCE: Geterotsepnyye vysokomolekulyarnyye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 73-75

TOPIC TAGS: diethylene glycol, phenylphosphoric acid dichloroanhydride, polyester urethan, polycondensation, polycondensation kinetics, second order reaction, reaction rate temperature dependence, phosphorus containing polyester urethan, urethan

ABSTRACT: Equimolecular proportions of diethylene glycol and phenylphosphoric acid dichloroanhydride were polycondensed in solution to study the kinetics of the process at 40-80C. Analysis of the results indicates a second order reaction up to conversion levels of 70%. The activation energy was calculated as 10.6 kcal/mol. The temperature had a significant effect on the reaction rate constant ($3.58 \cdot 10^{-4}$ and $22.3 \cdot 10^{-4}$ $l \cdot mol^{-1} \cdot sec^{-1}$ at 40 and 80, respectively), the temperature coefficient (1.73 and 1.45, respectively) and the rate of reaction (33 and 71%, respectively after 2 min.). The polyester obtained was a colorless, highly viscous liquid with molecular weight about 2000. Orig. art. has: 4 graphs, 1 table and

Card 1/2

ACCESSION NR: AT4033988

3 formulas.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology)

SUBMITTED: 23Jun62 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC NO REF SOV: 001 OTHER: 000

Card 2/2

ACCESSION NR: AT4034010 S/0000/63/000/000/0243/0245

AUTHOR: Datskevich, L.A.; Mayboroda, V.D.; Losev, I.P. (Deceased)

TITLE: Synthesis and investigation of phosphorus-containing polyesterurethans. II. The reactivity of the dichloroanhydrides of substituted phenylphosphoric acids

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 243-245

TOPIC TAGS: polymer, phosphorus containing polymer, urethan polymer, polyesterurethan, phosphorus containing polyesterurethan, phenylphosphate, phenylphosphoric acid dichloroanhydride fireproof material

ABSTRACT: In a study of the reactivity of dichloroanhydride-substituted phenylphosphoric acids, the kinetics of the latter's interaction with diethyleneglycol was investigated at 50C and the reaction rate constants for different substituted products were graphically determined. The following scheme is offered to represent the reaction mechanism:

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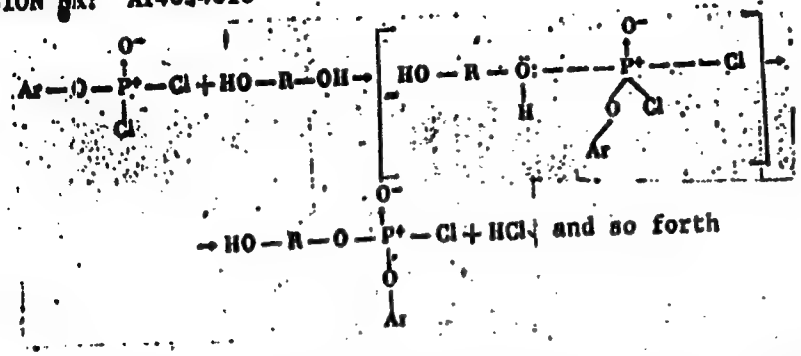
ACCESSION NR: AT4034010



(1)

in which Ar stands for phenyl, p-chlorophenyl, p-bromophenyl, p-nitrophenyl, p-methylphenyl, m-methylphenyl and tertiary n-butylphenyl, involved in the study. Electropositive substitutes, present in the benzene ring of a dichloroanhydride, were found to slow down the polycondensation reaction and to accelerate the electronegative reaction. Synchesis of fireproof film materials is believed to be feasible from P-containing polyesters and diisocyanates. Orig. art. has: 2 tables and 2 figures.

Card 2/3

ACCESSION NR: AT4034010

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Technology Institute)

SUBMITTED: 26Apr63	DATE ACQ: 30Apr64	ENCL: 00
SUB CODE: OC, MT	NO REF SOV: 003	OTHER: 000

Card 3/3

ACCESSION NR: AP4043790 S/0190/64/006/008/1498/1500

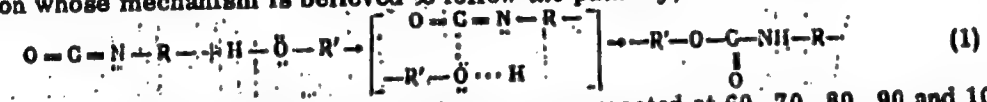
AUTHOR: Datskevich, L. A., Mayboroda, V. D., Losev, I. R.

TITLE: Synthesis and investigation of phosphorus-containing polyesterurethanes. III

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 8, 1964, 1498-1500

TOPIC TAGS: polyesterurethane, urethane, phosphorylated polymer, polymerization kinetics, phenylphosphoric acid, triethylene glycol, hexamethylene diisocyanate

ABSTRACT: Phosphorus-containing polyesterurethanes were synthesized from 1,6-hexamethylenediisocyanate and a polymer based on triethyleneglycol and the dichloroanhydride of phenylphosphoric acid, in the absence of a solvent, in order to expand the practical uses of a reaction whose mechanism is believed to follow the pathway;



(1)

Equimolar amounts of the cyanate and the polymer were reacted at 60, 70, 80, 90 and 100C in a testtube provided with a mechanical mixer for a period of 3-6 hrs, during which time the isocyanate number and the refractivity were periodially determined to follow the dynamics

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L 12011-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/RM
ACCESSION NR: AP4047221 S/0190/64/006/010/1907/1910

AUTHOR: Mayboroda, V. D.; Datskevich, L. A.

TITLE: Polycondensation of phenyl phosphorodichloridate with diethylene glycol

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, 10, 1964, 1907-1910

TOPIC TAGS: polycondensation, polyester, phosphorus containing polyester, phenyl phosphorodichloridate, diethylene glycol, polyurethan

ABSTRACT: Communication 4 of the series "Synthesis and investigation of phosphorus-containing polyester-urethans" reports a study of the polycondensation of phenyl phosphorodichloridate with diethylene glycol in a 1/1 molar ratio in the melt at 40—80C. A polyester, linear in structure and with little branching, was obtained, which reacts with 1,6-hexamethylene diisocyanate to form a polyurethan. The effect of polycondensation temperature and time on the degree of completion, polyester yield, intrinsic viscosity, and polyester refractive index was studied. The maximum degree of completion was

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L 18011-65
ACCESSION NR: AP4047221

96—98% at 60, 70, and 80C and a 1-hr reaction time. The maximum polyester yield of 90—93% was attained at 40—50C and a 5-hr reaction time. The observed increase in refractive index and intrinsic viscosity in the course of the polycondensation indicates a rise in the molecular weight of the polyester with reaction time. Despite the near completion of the polycondensation after 0.5—2 hr, further heating resulted in a molecular-weight increase, evidently due to the reaction of the macromolecules between themselves. Other possible side reactions resulting in a drop in polyester yield and molecular weight are discussed. Orig. art. has: 2 figures and 7 formulas.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Technology Institute).

SUBMITTED: 27Dec63 ATD PRESS: 3122 ENCL: 00

SUB CODE: OC, GC NO REF SOV: 002 OTHER: 000

Card 2/2

DATSKEVICH, M.F.; POTEKHIN, S.S.; ZIMIN, F.F.; POPOV, I.Ye.; RUSIN, P.N.; ANOKHIN, S.D.; NESTEROV, V.F.; FROLOV, V.A.; GRYAZNOV, V.A., red.; USTIYANTS, V.A.; KAPRALOVA, A.A., tekhn.red.

[Modernizing punched card calculating machines] Opyt modernizatsii schetno-perforatsionnykh mashin. Moskva, Gos. stat. izd-vo, 1957. 75 p. (MIRA 11:4)

1. Russia (1923- U.S.S.R.) Upravleniye "Soyuzmashuchet."
(Punched card systems)
(Calculating machines)

DATSKEVICH, Mikhail Frantsevich; ZEMLYANSKIY, Aleksandr Sergeyevich; KAGANOVICH, Abram Yul'yevich; NIKANOROV, Timofey Mikhaylovich. Prinimal uchastiye KHOMENKO, P.G., IVANOV, M.I., red.; KOROTKOVA, L., red.; TELEGINA, T., tekhn.red.

[Operation of accounting machines in State Bank enterprises] Ekspluatatsiia schetnykh mashin v uchrezhdeniiakh Gosbanka. Moskva, Gosfinizdat, 1959. 319 p. (MIRA 13:3)
(Accounting machines)

ALIYEV, G.A. (Moskva); BUSLENKO, N.P. (Moskva); KLIMOV, G.P. (Moskva); NAZARENKO, A.I. (Moskva); Prinimali uchastiye: POLYAKOVA, N.A.; DATSKEVICH, R.T.; GAYDABUKA, L.A.

Modeling of the operation of an automated furnace machine for welding pipes. Probl. kib. no.9:211-240 '63. (MIRA 17:10)

1. Elektrostal'skiy zavod tyazhelogo mashinostroyeniya (for Polyakova, Datskevich, Gaydabuka).

GAVRIN, V.F.; DATSKEVICH, V.A.

Ecology of the shrike Lanius cristatus collurio L. in the Byaloveshska Pushcha [with summary in English]. Zool. zhur. 37 no.7:1082-1090 Jl '58. (MIRA 11:9)

1.Gosudarstvennyy zapovednik "Belovezhskaya pushcha."
(Byaloveshska Pushcha--Shrikes)

DATSKEVICH, V.

Foot switch or headlights of the "Moskvich-407" car. Za rul. 18 no.9:26 S'60. (MIRA 13:10)

(Automobiles--Lighting)

DATSKEVICH, V.

Pay parking lots for every city district. Za rul. 19 no. 2:32 F '61. (MIRA 14:4)

(Automobile parking)

S/117/60/000/012/015/022
A004/A001

AUTHORS: Malinina, N., Molodkina, M., Datskiy, M., Filippov, G.

TITLE: Cement Models for the Manufacture of Dies

PERIODICAL: Mashinostroitel', 1960, No. 12, p. 36

TEXT: Generally the complex profile of the working surface of forging dies for blades is machined on copying milling machines according to wooden model templets. These models lose their geometrical shape rather quick because of temperature fluctuations and the effects of air moisture in the storing rooms. Instead of having model sets for forging dies made of wood, the manufacture of which takes a model maker of the 6th grade some seven days, the Leningradskiy metallicheskiy zavod (Leningrad Metallicheskiy Plant) produces these models from cement. The templets used for the cement-model making serve also for the checking of the die shape during the milling operation and fitting work. At the beginning a frame work is manufactured from templets, distance sleeves and gaging pins. Braces are mounted on the sides of the framework, tightened by wedges and cramps. Then diluted construction gypsum is filled into the framework, the side walls of which are removed after the solidification of the gypsum. The profile of the die

Card 1/2

Cement Models for the Manufacture of Dies

model is then shaped subsequently between every pair of neighboring templets, the surplus gypsum being cut away flush with the templet profile. Those parts of the profile for which the framework does not provide a templet is done by surface gaging. The ready gypsum mold is covered with a thin nitro-lacquer coating and greased with stearin diluted with kerosene in order to prevent the gypsum from sticking to the cement. Side walls are mounted to the ready mold and the cement is poured in. The process of the cement model setting takes 3-4 days. The cast cement model-templet has a smoother and better surface than the wooden ones, while its manufacture costs by 2-2.5 times less than that of wooden model-templets. There are 4 figures.

Card 2/2

L 23557-66 EWT(d)/EWT(1) IJP(c)

ACC NR: AP6002946 (A) SOURCE CODE: UR/0286/65/000/024/0107/0107

AUTHOR: Datskovskiy, V. M.

ORG: none

TITLE: Hydraulic integrator for solving systems of three differential equations with partial derivatives. Class 42, No. 177176

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 107

TOPIC TAGS: hydraulic logic device, heat equation

ABSTRACT: This Author Certificate presents a hydraulic integrator for solving systems of three differential equations with partial derivatives, e.g., equations describing the nonstationary heat exchange between a gas and a layer of friable material blowing through this gas (taking into account the thermal conductivity of its parts). The integrator contains piezometric integrators. To reduce the number of experiments required to solve the problem and for the unique arrangement of the surfaces of piezometers, hydraulic resistances, and initial and boundary conditions, the integrator contains a group of coupled capillaries and piezometer stopcocks. Each of the groups of piezometers interlocked by one lever is connected through stopcocks to piezometers modulating the time segments.

SUB CODE: 13, 20/ SUBM DATE: 24Jun63

Card 1/1 UDK: 681.141—522

S/799/62/000/002/003/011

AUTHORS: Barilovskiy, V. L., Vagner, E. N., Glukhov, Yu. N., Datsko, A. V., Stupin, E. F.

TITLE: Potential static trigger having a current key with back coupling through logical diode networks.

SOURCE: Akademiya nauk SSSR. Institut elektronnykh upravlyayushchikh mashin. Tsifrovaya tekhnika i vychislitel'nyye ustroystva. no. 2. 1962, 36-43.

TEXT: The paper presents a potential static trigger network utilizing a current key which serves for the making of systems of elements that are fairly fast-acting and are free, to a significant extent, of the shortcomings of other current-switching schemes which require the use of a large number of semiconductor triodes which must be fairly uniform in some of their parameters, such as the voltage between the emitter and the base of the open triode, the base current of the closed triode, and must have fairly elevated values of the current-amplification coefficient, also the unavoidable limitations to the scatter in the values of the resistances and of the stability of the power supply. A circuit diagram of the trigger is shown. The outstanding characteristic of this current key (Author's Certificate no. 130240, entitled "Shaper-inverter") consists in the fact that the collector circuits of its triodes include fairly high ohmic resistors and diodes which on the collectors of the triodes

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of the key affords fixed voltage drops of the order of 5-10 v, which are then amplified by the emitter-repeaters, which employ triodes. These magnitudes of the voltage differences at the trigger output permit one to employ logical diode networks in the construction of computers, an arrangement which reduces significantly the number of transistors employed. A circuit diagram of a logical diode scheme is shown. The frequency characteristics of the network and the design problems of a system of elements are discussed, and the basic requirements for the portions and design elements of the circuitry are set forth. The potential static trigger described in the paper is fairly fast-operating. All of the triodes of the trigger operate in a nonsaturated regime. The fairly large voltage differences afforded by the current key permit the use of the trigger in conjunction with diode circuits. The starting of the trigger and the feedback in it are performed through logical diode networks. There are no reactive elements, since all connections are by DC. A large scatter in the parameters of the transistors and diodes is permissible. The requirements relative to the resistances and the stability of the power supply become more stringent as a result thereof. However, they are readily fulfilled. There are 2 figures and 9 references (8 Russian-language Soviet and 1 English-language: R. K. Richards, Arithmetical operational on digital computing machines, in Russian-language translation, Moscow. Foreign Literature Publishing House, 1957).

DATSKO, G.M.

Seasonal changes in physicomechanical properties of surficial strata. Biul.MOIP.Otd.geol. 35 no.2:159-161 Mr-Ap '60. (MIRA 14:4)
(Soil mechanics)

DATSKO, G.M.

Seasonal changes of the modulus of soil and ground deformation in the forest zone of the European part of the U.S.S.R. Vest.-Mosk.un.Ser.4:Geol. 17 no.4:62-67 Jl-Ag '62. (MIRA 15:9)

1. Kafedra gruntovedeniya i inzhenernoy geologii Moskovskogo gosudarstvennogo universiteta.
(Soil mechanics)

DATSKO, N.F.

Method of erecting oil field frame and pile installations at great ocean depths using turbodrills. Trudy Azerb.ind.inst.no.9:98-106 '55. (Oil well drilling, Submarine) (MLRA 9:10)

15-57-8-11689

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 8, p 240 (USSR)

AUTHOR: Datsko, N. F.

TITLE: Description and Erection of Off-Shore Drill-Rig Platform for Sea Depth of 20 Meters (Neftepromyslovaya estakada dlya glubiny morya 20 m i sposob yeye vozvedeniya)

PERIODICAL: Tr. Azerb. industr. in-ta, 1956, Nr 13, pp 89-102

ABSTRACT: The DEA drill-rig platform was designed by N. F. Datsko, G. G. Yelesuiskiy, and N. M. Aliyevyy, members of the Department of Strength of Materials and Structural Mechanics of the Azerbaidzhan SSR Industrial Institute. It is usable for any type of relief and for any lithology of the sea bottom. The use of tubular piles equipped with turbine drills makes it possible to sink the piles in the bottom rapidly to any necessary

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15-57-8-11689

Description and Erection of Off-Shore Drill-Rig (Cont.)

The fabricated supports and the trusses are mounted with a special crane which is set up on the fabricated truss of the platform. The crane is dismantled after the work is completed and may be transferred to another location.

Card 3/3

K. G. Volodchenko

DATSKO, N.F.

Elevated steel deck with broad supports for operations in deep sea oil fields. Izv. vys. ucheb. zav.; neft' i gaz no.6:109-115 '58. (MIRA 11:9)

1. Azerbaydzhanskiy industrial'nyy institut im. M. Azizbekova.
(Oil well drilling, Submarine--Equipment and supplies)

VLADZIMIRSKAYA, Ye.V. [Vladzimirs'ka, O.V.]; DATSKO, N.N. [Datsko, N.M.]

Arylides of carbamythioglycolic acid as reagents for chemical analysis. Farmatsev. zhur. 19 no.4:38-42 '64. (MIRA 17:11)

1. Kafedra farmatsevticheskoy khimii L'vovskogo meditsinskogo instituta (zaveduyushchiy kafedroy prof. M.M. Turkevich).

SOV/126-6-5-21/43

AUTHORS: Datsko, O. I., and Pavlov, V. A.

TITLE: Temperature Dependence of the Internal Friction in Pure Nickel (Temperaturnaya zavisimost' vnutrennego treniya chistogo nikelya)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 5, pp 900-904 (USSR)

ABSTRACT: The authors used electrolytic nickel of 99.987% purity. Ingots of nickel were rolled and drawn at room temperature in several stages until a wire of 0.80 mm dia. was produced. In between the forming stages the samples were annealed at 800°C in vacuo. After the last anneal the wire was deformed by 80% reduction of its cross section and cut into 300 cm lengths. The temperature dependence of the internal friction was determined by means of a torsional pendulum oscillating at 0.5 c/s in 10^{-3} - 10^{-4} mm Hg vacuum. The following procedure was applied in each set of measurements: a sample was heated at 2°C/min to 700-900°C and then cooled slowly to room temperature by switching off the furnace and leaving the sample in it. After each such anneal the temperature dependence of the internal friction was measured and recorded. In the first

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Temperature Dependence of the Internal Friction in Pure Nickel

heating of a deformed sample to 700°C or more, recrystallisation occurred at 400°C. Each subsequent heating produced collective recrystallisation. Fig.1 shows the temperature dependence of the internal friction of nickel as a function of the anneal temperature. Curves 1-5 in Fig.1 represent the results obtained by short anneals at 700, 750, 800, 850 and 900°C respectively, while curve 6 is the result of a 3-hour anneal at 900°C. Fig.2 gives the temperature dependence of the internal friction of nickel as a function of deformation by 1% (curve 1) and subsequent short anneals at 700°C (curve 2), 800°C (curve 3), 900°C (curve 4), and a 3-hour anneal at 900°C (curve 5). Fig.3 presents data, analogous to those of Fig.2 for 2% deformation (curve 2) and subsequent anneals at 900°C (short anneal, curve 3 and 3-hour, curve 1). Fig.4 shows the effect of addition of 0.023% (curve 1), 0.05% (curve 2) and 0.24% (curve 3) of aluminium on the temperature dependence of the internal friction of nickel. The authors make the following conclusions.

1. The internal friction peak at 440-460°C is due to

relaxation stresses along grain boundaries. This peak decreases in amplitude and is slightly displaced towards higher temperatures on increase of the annealing temperature. This is due to the increase of the grain size and the change in properties of the grain boundaries on collective recrystallisation.
2. The internal friction peak at 630-800°C is due to relaxation of stresses on mosaic block boundaries. It increases in amplitude and is displaced towards lower temperatures by plastic deformation. Increase of the temperature of anneals carried out after deformation displaces this peak towards higher temperatures and reduces its amplitude. This behaviour is due to processes of growth and reduction in size of the mosaic blocks, which are accompanied by changes in the properties of the block boundaries. The 630-800°C peak disappears when a foreign metal (e.g. aluminium) is added to nickel (Fig.4).
There are 5 figures and 14 references, 4 of which are Soviet, 6 English, 2 German, 1 French and 1 translation from English.

SOV/126-6-5-21/43

Temperature Dependence of the Internal Friction in Pure Nickel

ASSOCIATION: Institut fiziki metallov Ural'skogo filiala AN SSSR (Institute of Metal Physics, Ural Branch of the Ac.Sc., USSR)

SUBMITTED: August 8, 1957

Card 4/4

DATSKO, O.I.

18(7) PHASE I BOOK EXPLOITATION SOV/3355

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. IV (Studies on Heat-Resistant Alloys, vol. 4), Moscow, Izd-vo AN SSSR, 1959. 400 p. Errata slip inserted. 2,200 copies printed.

Ed. of Publishing House: V. A. Klimov; Tech. Ed.: A. P. Guseva; Editorial Board: I. P. Bardin, Academician; G. V. Kurdyumov, Academician; N. V. Ageyev; Corresponding Member, USSR Academy of Sciences; I. A. Oding, I. N. Pavlov, and I. P. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various problems in the structural metallurgy of heat-resistant alloys. Some are concerned with theoretical principles, some with descriptions of new equipment and methods, others with properties of specific materials. Various phenomena occurring under specified conditions are studied and reported on. For details, see Table of Contents. The articles are accompanied by a number of references, both Soviet and non-Soviet.

TABLE OF CONTENTS:

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PAVLOV, V.A.; GAYDUKOV, M.G.; DATSKO, O.I.; NOSKOVA, N.I.; PERETURINA, I.A.

Effect of structural characteristics on metal behavior at high temperatures. Issl.po zharopr.splav. 4:26-35 '59.
(MIRA 13:5)
(Nickel-copper alloys--Metallography)

S/520/59/000/022/017/021
E193/E483

AUTHOR: Datsko, O.I.

TITLE: Change of the Properties of the Grain Boundaries of Nickel Brought About by Alloying With Copper

PERIODICAL: Akademiya nauk SSSR. Ural'skiy filial, Sverdlovsk. Institut fiziki metallov. Trudy, No.22,1959,pp.117-121

TEXT: The object of the investigation described in the present paper was to study the causes and the mechanism of the slowing down of the relaxation processes, associated with the properties of grain boundaries, in pure nickel and in Ni-Cu alloys. To this end, the temperature-dependence of internal friction and natural frequency of vibrations of the alloys studied was determined by the torsional pendulum method and the recrystallization temperature of these metals was measured. The experimental alloys (pure nickel and alloys containing 10, 20 and 40 wt.% Cu) were prepared by vacuum-melting from electrolytic nickel and copper, preliminarily degassed by vacuum annealing. The wire specimens (300 mm long, 0.8 mm in diameter) were prepared by rolling and drawing, the final cold-drawing stage having been carried out to give a total reduction of area of 80%. The experiments were carried out in

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the following manner: the cold-worked specimen was heated at the rate of 2°C/min to the annealing temperature and maintained at that temperature for a pre-determined time. The specimen was then furnace-cooled to room temperature, after which it was heated again to the annealing temperature. During both the first and second heating cycle, the temperature dependence of the natural frequency of vibration and of internal friction (Q^{-1}) was determined. In the case of annealed material (second heating cycle) care was taken to carry out the measurements on specimens with the same thermal and mechanical history and the same grain size, in order to exclude the possibility of the results being affected by the variation of these factors. To determine the temperature of the beginning of recrystallization, several cold-worked specimens of an alloy were heated to various temperatures, after which they were electrolytically polished in a 57:37:7 glycerine:orthophosphoric acid:water electrolyte, etched lightly in a 1:1 nitric acid:acetic acid mixture and examined under microscope. The temperature of the treatment, after which the entire surface of the specimen was occupied by newly-formed grains, was regarded as the recrystallization temperature of a given alloy.

The main results are reproduced in Fig.1, where internal friction (Q^{-1}) of specimens annealed for 3 h at 900°C is plotted against the test temperature (°C), curves 1 to 5 relating to: 1 - pure nickel (grain size a ≃ 0.2 mm); 2 - 10% Cu-Ni alloy (a ≃ 0.04 mm); 3 - 20% Cu-Ni alloy; 4 - 40% Cu-Ni alloy; 5 - 10% Cu-Ni alloy extended to 3% elongation and subsequently annealed for 3 h at 1050°C (a ≃ 0.15 mm). It will be seen that whereas pure nickel has two internal friction peaks at 420 to 440 and 700 to 760°C, the internal friction of Ni-Cu alloys, very low at temperatures below 500°C, increases rapidly and monotonically at higher temperatures, reaching a maximum in the 740 to 900°C temperature range. In Fig.2, the square of the natural frequency of vibrations (f^2) of cold-worked Ni, 10% Cu-Ni, 20% Cu-Ni and 40% Cu-Ni alloy specimens (Curves 1 to 4 respectively) is plotted against the test temperature (°C). It will be seen that all curves relating to alloys are below that constructed for pure nickel and that, with increasing temperature, f^2 decreases (the rate of decrease being highest in nickel), the curves relating to alloys being parallel at low temperatures and starting to converge at about 500°C. The recrystallization temperature was found to be

380 ± 15°C for pure nickel and 585 ± 15°C for the Ni-Cu alloys, irrespective of their Cu content. Recent results of the author and V.A.Pavlov (Ref.5) are quoted; they have found that the internal friction peak, observed in nickel in the 420 to 440°C range, disappears if the size of the individual grains exceeds the diameter of the specimen, from which they inferred that this peak is associated with the relaxation of stresses along the grain boundaries. Since the magnitude of the internal friction peak, observed in the 10% Cu-Ni alloy with somewhat large grains (Curve 5, Fig.1) was lower than that displayed by the finely-crystalline material (Curves 2 to 4, Fig.1), it is most likely that the internal friction peaks on curves 2, 3, 4 and 5 are also associated with the relaxation processes at the grain boundaries. The results of the present investigation indicate that the temperature of both recrystallization and relaxation processes, which take place at nickel grain boundaries, is raised by copper additions. This change cannot be attributed to the variation of the atomic bond forces, since these, as is illustrated by curves shown in Fig.2, decrease with increasing Cu content. It would appear that the introduction of copper brings about changes in the